

Devis.  
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L1 FILE 'REGISTRY' ENTERED AT 09:19:27 ON 01 MAR 2002  
1 S EEK..L[7.]VV.NA | EEKPLTTAA.APVV.NA/SQSP

Seq ID 112

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2002 ACS  
RN 211046-36-5 REGISTRY  
CN Peptide, (Glu-Glu-Lys-Thr-Pro-Leu-Thr-Thr-Ala-Ala-Xaa-Ala-Pro-Val-  
Val-Xaa-Asn-Ala) (9CI) (CA INDEX NAME)  
CI MAN  
SQL 18

SEQ 1 EEKPLTTAA XAPVVXNA  
=====

HITS AT: 1-18

REFERENCE 1: 129:160619

L2 FILE 'CAPLUS' ENTERED AT 09:20:16 ON 01 MAR 2002  
1 S L1

L2 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1998:527345 CAPLUS  
DOCUMENT NUMBER: 129:160619  
TITLE: Pseudomonas aeruginosa antigen  
INVENTOR(S): Cripps, Allan William; Kyd, Jannelle; Dunkley,  
Margaret; Clancy, Robert Llewellyn  
PATENT ASSIGNEE(S): Auspharm International Limited, Australia;  
Chapman, Paul, William  
SOURCE: PCT Int. Appl., 23 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9832769	A1	19980730	WO 1998-GB217	19980126
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			
ZA 9800587	A	19990723	ZA 1998-587	19980123
AU 9857717	A1	19980818	AU 1998-57717	19980126
EP 980389	A1	20000223	EP 1998-901378	19980126
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI			
JP 2001511125	T2	20010807	JP 1998-531741	19980126
PRIORITY APPLN. INFO.:			GB 1997-1489	A 19970124
			WO 1998-GB217	W 19980126
AB	A novel antigen from P. aeruginosa is provided. The use of the antigen in detecting/diagnosing P. aeruginosa as well as its use in eliciting an immune response are also provided.			
IT	211046-36-5D, derivs.			

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RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(Pseudomonas aeruginosa antigen for diagnosing and treating Pseudomonas aeruginosa infection in cystic fibrosis patients)

L3 11252 SEA FILE=CAPLUS ABB=ON PLU=ON OMP OR OPR# OR MOMP OR  
OUTER(W)MEMBRAN?(W)PROTEIN  
L4 423 SEA FILE=CAPLUS ABB=ON PLU=ON L3(S)AERUGIN?  
L5 26 SEA FILE=CAPLUS ABB=ON PLU=ON L4(S)ANTIGEN?

-key terms

=> s 15 not 12  
L6 26 L5 NOT L2

L6 ANSWER 1 OF 26 CAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 2001:617858 CAPLUS  
DOCUMENT NUMBER: 135:194461  
TITLE: Th1 inducing natural adjuvant for heterologous antigens  
INVENTOR(S): Revets, Hilde; Cornelis, Pierre; De Baetselier, Patrick  
PATENT ASSIGNEE(S): Vlaams Interuniversitair Instituut Voor Biotechnologie Vzw, Belg.  
SOURCE: PCT Int. Appl., 53 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001060404	A2	20010823	WO 2001-EP1673	20010213
WO 2001060404	A3	20020110		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			

PRIORITY APPLN. INFO.: EP 2000-200589 A 20000218

AB The present invention relates to the use of the major **OprI** lipoprotein of **Pseudomonas aeruginosa** to elicit a Type-1 immune response towards a heterologous **antigen**. The invention relates specifically to the use of OprI-antigen fusion proteins to elicit said Type-1 response. More particularly, the present invention is directed to pharmaceutical formulations comprising OprI and/or OprI fusion proteins, optionally together with a suitable excipient, to stimulate the Th1 dependent, cellular immune response.

L6 ANSWER 2 OF 26 CAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 2001:309967 CAPLUS

Searcher : Shears 308-4994

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DOCUMENT NUMBER: 135:75462  
TITLE: Protection against *Pseudomonas aeruginosa* chronic lung infection in mice by genetic immunization against outer membrane protein F (OprF) of *P. aeruginosa*  
AUTHOR(S): Price, Brian M.; Galloway, Darrell R.; Baker, Neil R.; Gilleland, Linda B.; Staczek, John; Gilleland, Harry E., Jr.  
CORPORATE SOURCE: Department of Microbiology, The Ohio State University, Columbus, OH, 43210, USA  
SOURCE: Infect. Immun. (2001), 69(5), 3510-3515  
CODEN: INFIBR; ISSN: 0019-9567  
PUBLISHER: American Society for Microbiology  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The *Pseudomonas aeruginosa* major constitutive outer membrane porin protein OprF, which has previously been shown to be a protective antigen, was targeted as a DNA vaccine candidate. The oprF gene was cloned into plasmid vector pVR1020, and the plasmid vaccine were delivered to mice by biolistic (gene gun) intradermal inoculation. Antibody titers in antisera from immunized mice were detd. by ELISA, and the elicited antibodies were shown to be specifically reactive to OprF by immunoblotting. The IgG (IgG) immune response was predominantly of the IgG1 isotype. Sera from DNA vaccine-immunized mice had significantly greater opsonic activity in opsonophagocytic assays than did sera from control mice. Following the initial immunization and two consecutive boosts, each at 2-wk intervals, protection was demonstrated in a mouse model of chronic pulmonary infection by *P. aeruginosa*. Eight days post-challenge, both lungs were removed and examd. A significant redn. in the presence of severe macroscopic lesions, as well as in the no. of bacteria present in the lungs, was seen. Based on these findings, genetic immunization with oprF has potential for development as a vaccine to protect humans against infection by *P. aeruginosa*.

REFERENCE COUNT: 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:241035 CAPLUS  
DOCUMENT NUMBER: 131:86596  
TITLE: A recombinant hybrid outer membrane protein for vaccination against *Pseudomonas aeruginosa*  
AUTHOR(S): Knapp, Bernhard; Hundt, Erika; Lenz, Uwe; Hungerer, Klaus-Dieter; Gabelsberger, Josef; Domdey, Horst; Mansouri, Erfan; Li, Yuanyi; Von Specht, Bernd-Ulrich  
CORPORATE SOURCE: Chiron Behring GmbH and Co., Marburg, 35006, Germany  
SOURCE: Vaccine (1999), 17(13-14), 1663-1666  
CODEN: VACCDE; ISSN: 0264-410X  
PUBLISHER: Elsevier Science Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Among the numerous targets which can be used for the development of vaccines against *Pseudomonas aeruginosa* we focused on the outer membrane proteins OprF and OprI. The C-terminal part of OprF from

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aa 190 to aa 350 was investigated for its conservation and its localization of B-cell epitopes. A hybrid protein which combines the protective epitopes of OprF and OprI was expressed in *E. coli* and was proven to be highly protective against an i.p. challenge with *P. aeruginosa* by active immunization of immunocompromised mice as well as by passive immunization of SCID mice with specific antisera. A purification procedure of the N-terminal His-tagged hybrid antigen was established using immobilized-metal-affinity chromatography. To evaluate its safety and immunogenicity, the recombinant protein was purified for the immunization of human volunteers. The OprF/OprI hybrid protein is considered to be a candidate for a vaccine against *P. aeruginosa*.

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 4 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:153595 CAPLUS

DOCUMENT NUMBER: 130:324106

TITLE: Safety and immunogenicity of a *Pseudomonas aeruginosa* hybrid outer membrane protein F-I vaccine in human volunteers

AUTHOR(S): Mansouri, Erfan; Gabelsberger, Josef; Knapp, Bernhard; Hundt, Erika; Lenz, Uwe; Hungerer, Klaus-Dieter; Gilleland, Harry E., Jr.; Staczek, John; Domdey, Horst; Von Specht, Bernd-Ulrich  
CORPORATE SOURCE: Chirurgische Universitätsklinik der Universität Freiburg, Freiburg, D-79106, Germany

SOURCE: Infect. Immun. (1999), 67(3), 1461-1470  
CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A hybrid protein [Met-Ala-(His)6OprF190-342-OprI21-83] consisting of the mature outer membrane protein I (OprI) and amino acids 190 to 342 OprF of *Pseudomonas aeruginosa* was expressed in *Escherichia coli* and purified by Ni<sup>2+</sup> chelate-affinity chromatography. After safety and pyrogenicity evaluations in animals, four groups of eight adult human volunteers were vaccinated i.m. three times at 4-wk intervals and revaccinated 6 mo later with either 500, 100, 50, or 20 µg of OprF-OprI adsorbed onto Al(OH)<sub>3</sub>. All vaccinations were well tolerated. After the first vaccination, a significant rise of antibody titers against *P. aeruginosa* OprF and OprI was measured in volunteers receiving the 100- or the 500-µg dose. After the second vaccination, significant antibody titers were measured for all groups. Elevated antibody titers against OprF and OprI could still be measured 6 mo after the third vaccination. The capacity of the elicited antibodies to promote complement binding and opsonization could be demonstrated by a Clq-binding assay and by the in vitro opsonophagocytic uptake of *P. aeruginosa* bacteria. These data support the continued development of an OprF-OprI vaccine for use in humans.

REFERENCE COUNT: 56 THERE ARE 56 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 5 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:358731 CAPLUS



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DOCUMENT NUMBER: 127:107743  
TITLE: A hybrid outer membrane  
protein antigen for  
vaccination against *Pseudomonas*  
*aeruginosa*  
AUTHOR(S): Gabelsberger, J.; Knapp, B.; Bauersachs, S.;  
Lenz, U.; Von Specht, B. U.; Domdey, H.  
CORPORATE SOURCE: Inst. Biochemie, Ludwig-Maximilians-Univ.,  
Munich, D-81377, Germany  
SOURCE: Behring Inst. Mitt. (1997), 98 (New Approaches to  
Bacterial Vaccine Development), 302-314  
CODEN: BHIMA2; ISSN: 0301-0457  
PUBLISHER: Medizinische Verlagsgesellschaft mbH  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB A hybrid protein contg. parts of the outer membrane proteins OprF and OprI from *P. aeruginosa* was expressed in *Escherichia coli* using distinct modifications which have not to be eliminated after its expression. Using different signal peptides, the yield of the hybrid protein OprF-OprI in *E. coli* was increased to 30% of the total cell protein, but only a very small amt. of the hybrid preprotein was processed and could be isolated from the periplasm of the host. A construct contg. a N-terminal extension of 11 amino acids from the original OprF gene gave rise to a higher expression in the cytoplasm. Purifn. was facilitated by the addn. of a 5 His tag at the C-terminus. An even higher expression was obtained by a construct in which a 6 His tag was attached to the N-terminus of the hybrid protein. The N-terminal extended OprF-OprI as well as the N-terminal His-tagged OprF-OprI hybrid antigens were purified by immobilized-metal affinity chromatog. under native and denaturing conditions.

L6 ANSWER 6 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:543256 CAPLUS  
DOCUMENT NUMBER: 125:190197  
TITLE: Analysis by flow cytometry of surface-exposed  
epitopes of outer membrane protein F of  
*Pseudomonas aeruginosa*  
AUTHOR(S): Hughes, Eileen E.; Matthews-Greer, Janice M.;  
Gilleland, H. E., Jr.  
CORPORATE SOURCE: Dep. of Microbiology and Immunology, Louisiana  
State Univ. Medical Center, Shreveport, LA,  
71130-3932, USA  
SOURCE: Can. J. Microbiol. (1996), 42(8), 859-862  
CODEN: CJMIAZ; ISSN: 0008-4166  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Antisera were produced in mice immunized with 18 synthetic peptide conjugates representing various regions throughout the length of the outer membrane protein F mol. of *Pseudomonas aeruginosa* and analyzed by flow cytometry to identify those antisera capable of binding to the surface of whole cells of *P. aeruginosa*. Antibodies to peptides 9, 18, 10, and 4 were significantly cell-surface reactive. The max. median percentage of antibody-binding cells in this assay was 36.6%. Over six different detns., peptide 9 antisera binding to the cells ranged from 16.9 to 57.0% of the cell population. We propose that the surface accessibility of protein F epitopes varies during the cell cycle.

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L6 ANSWER 7 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:494165 CAPLUS  
DOCUMENT NUMBER: 125:140540  
TITLE: Immunogenic hybrid protein oprF-oprI derived  
from Pseudomonas aeruginosa membrane proteins  
INVENTOR(S): Knapp, Bernhard; Hungerer, Klaus-Dieter;  
Broeker, Michael; Von Specht, Bernd Ulrich;  
Domdey, Horst  
PATENT ASSIGNEE(S): Behringwerke Aktiengesellschaft, Germany  
SOURCE: Eur. Pat. Appl., 23 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 717106	A1	19960619	EP 1995-118098	19951117
EP 717106	B1	20000315		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
AT 190657	E	20000415	AT 1995-118098	19951117
AU 9540419	A1	19960627	AU 1995-40419	19951214
US 5955090	A	19990921	US 1995-572447	19951214
CA 2165401	AA	19960617	CA 1995-2165401	19951215
JP 08245699	A2	19960924	JP 1995-329154	19951218
US 6300102	B1	20011009	US 1999-267747	19990310

PRIORITY APPLN. INFO.: EP 1994-120023 A 19941216  
US 1995-572447 A3 19951214

AB The present invention relates to a hybrid protein comprising the Pseudomonas aeruginosa outer membrane protein I (OprI) which is fused with its amino terminal end to the carboxy-terminal end of a carboxy-terminal portion of the Pseudomonas aeruginosa outer membrane protein F (OprF), as well as to monoclonal or polyclonal antibodies against this hybrid protein. Both, the hybrid protein and the antibodies directed to the hybrid protein and the antibodies directed to the hybrid protein confer protection against an infection by Pseudomonas aeruginosa to lab. animals or man.

L6 ANSWER 8 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:480805 CAPLUS  
DOCUMENT NUMBER: 125:139943  
TITLE: The development of the Pseudomonas  
**aeruginosa outer  
membrane protein OprF**  
as a presentation vector for foreign  
**antigenic determinants**  
AUTHOR(S): Wong, Rebecca Suk Yi  
CORPORATE SOURCE: Univ. of British Columbia, Vancouver, BC, Can.  
SOURCE: (1995) 198 pp. Avail.: Univ. Microfilms Int.,  
Order No. DANN06084  
From: Diss. Abstr. Int., B 1996, 57(3), 1705  
DOCUMENT TYPE: Dissertation  
LANGUAGE: English  
AB Unavailable

Searcher : Shears 308-4994

L6 ANSWER 9 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:395288 CAPLUS

DOCUMENT NUMBER: 125:112223

TITLE: The effect of the length of a malarial epitope on its **antigenicity** and immunogenicity in an epitope presentation system using the *Pseudomonas aeruginosa* outer **membrane protein OprF** as the carrier

AUTHOR(S): Wong, Rebecca S. Y.; Hancock, Robert E. W.

CORPORATE SOURCE: Department of Microbiology and Immunology, #300-6174 University Boulevard, University of British Columbia, Vancouver, B.C. V6T 1Z3, Can.

SOURCE: FEMS Microbiol. Lett. (1996), 140(2-3), 209-214

CODEN: FMLED7; ISSN: 0378-1097

DOCUMENT TYPE: Journal

LANGUAGE: English

AB This study showed that the **antigenicity** of a malarial epitope increased with the length of the epitope when inserted at positions aa26 (amino acid position 26) and aa196, but not at aa 213, of the *Pseudomonas aeruginosa* major outer **membrane protein OprF** (326 amino acids). Immunization studies showed that a 19-aa epitope was more immunogenic than a 7-aa epitope when inserted at aa26 of OprF, while neither an 11- nor a 19-aa epitope fused to the C-terminus of glutathione S-transferase was immunogenic.

L6 ANSWER 10 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:7995 CAPLUS

DOCUMENT NUMBER: 124:111598

TITLE: Identification of **outer membrane proteins** as target **antigens** of *Pseudomonas aeruginosa* homma serotype M

AUTHOR(S): Yokota, Shin-Ichi

CORPORATE SOURCE: Sumitomo Pharmaceuticals Research Center, Konohana, 554, Japan

SOURCE: Clin. Diagn. Lab. Immunol. (1995), 2(6), 747-52

CODEN: CDIMEN; ISSN: 1071-412X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB *Pseudomonas aeruginosa* is routinely serotyped in Japan by using the Homma scheme. The serotypes (O serotypes) are based on the chem. structure of the O-polysaccharide portion of the lipopolysaccharide (LPS). However, the nature of the Homma serotype M antigen has remained obscure because strains classified as serotype M usually have the rough phenotype. The target antigen of serotype M was characterized. The results of Western blotting (immunoblotting) showed that com. available typing monoclonal antibody (MAb) against serotype M specifically bound to outer membrane protein (Opr) G and that typing rabbit antiserum specific for serotype M mainly contained antibodies against Oprs F and H2. These Oprs were distributed among all *P. aeruginosa* strains tested, including the serotype std., serotype M and nontypeable strains, and a series of LPS-core-defective mutants derived from strain PAC1. However, the rough mutants derived from strain PAC1 agglutinated with the anti-serotype M antibodies, whereas the smooth strains did not. LPS prepns. from serotype M strains possessed few or no polysaccharide

chains. These strains had higher levels of binding activity with anti-serotypes M MAb, as well as with anti-lipid A MAb, which specifically bound to the cell surface of the rough-natured gram-neg. bacterial strains with high activity. The anti-serotype M antiserum also contained rough-LPS-specific antibodies, but the epitope was distributed among only a few strains. The results suggested that the Oprs acted as the serotype M antigen and that LPS did not. In conclusion, the rough strains agglutinated with anti-Opr antibodies and were distinguished as serotype M from the smooth strains of other serotypes, because the antibodies were accessible to the cell surface lacking O polysaccharides. Presumably, Homma serotype M is an index of the rough nature of *P. aeruginosa* strains rather than one of the O serotypes.

L6 ANSWER 11 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:860526 CAPLUS

DOCUMENT NUMBER: 124:3499

TITLE: Use of synthetic peptides to identify surface-exposed, linear B-cell epitopes within outer membrane protein F of *Pseudomonas aeruginosa*

AUTHOR(S): Gilleland, Harry E., Jr.; Hughes, Eileen, E.; Gilleland, Linda B.; Matthews-Greer, Janice M.; Staczek, John

CORPORATE SOURCE: Department of Microbiology and Immunology, Louisiana State University Medical Center, Shreveport, LA, 71130-3932, USA

SOURCE: Curr. Microbiol. (1995), 31(5), 279-86  
CODEN: CUMIDD; ISSN: 0343-8651

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In a previous study (Hughes E. E., Gilleland L. B., Gilleland HE Jr. [1992] Infect Immun 60:3497-3503), ten synthetic peptides were used to test for surface-exposed **antigenic** regions located throughout the length of **outer membrane protein F** of *Pseudomonas aeruginosa*. An addnl. nine peptides of 11-21 amino acid residues in length were synthesized. Antisera collected from mice immunized with each of the 19 synthetic peptides conjugated to keyhole limpet hemocyanin were used to det. which of the peptides had elicited antibodies capable of reacting with the surface of whole cells of the various heterologous Fishder-Devlin immunotypes of *P. aeruginosa*. Cell surface reactivity was measured by an ELISA (ELISA) with whole cells of the various immunotypes as the ELISA antigens and by opsonophagocytic uptake assays with the various peptide-directed antisera, immunotype 2 *P. aeruginosa* cells, and polymorphonuclear leukocytes of human and murine origin. Three peptides located in the carboxy-terminal portion of protein F elicited antibodies with the greatest cell-surface reactivity. Peptide 9 (TDAYNQKLSERRAN), PEPTIDE 10 (NATAEGRAINRRVE), and peptide 18 (NEYG-VEGGRVNAV) appear to have sufficient potential for further development as vaccine candidates for immunoprophylaxis against infections caused by *P. aeruginosa*. A topol. model for the arrangement of protein F within the outer membrane of *P. aeruginosa* is presented.

L6 ANSWER 12 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:694637 CAPLUS

DOCUMENT NUMBER: 123:282968

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TITLE: **Pseudomonas aeruginosa outer membrane protein OprF**  
as an expression vector for foreign epitopes:  
the effects of positioning and length on the  
**antigenicity** of the epitope

AUTHOR(S): Wong, Rebecca S. Y.; Wirtz, Robert A.; Hancock, Robert E. W.

CORPORATE SOURCE: Dep. Microbiol. Immunol, Univ. British Columbia, Vancouver, BC, V6T1Z3, Can.

SOURCE: Gene (1995), 158(1), 55-60  
CODEN: GENED6; ISSN: 0378-1119

DOCUMENT TYPE: Journal

LANGUAGE: English

AB OprF, the major outer membrane (OM) protein of *Pseudomonas aeruginosa*, has been proposed to be comprised of a series of .beta.-strands sepd. by periplasmic or surface-exposed loop regions. In this study, a simple malarial epitope was used to demonstrate that OprF can be used as an expression vector to present foreign peptide sequences, namely, the 4-amino-acid (aa) repeating epitope (Asn-Ala-Asn-Pro = NANP) of the circumsporozoite protein of the human malarial parasite *Plasmodium falciparum*. Eight permissive sites, that allowed the expression and surface exposure of the malarial epitope, were identified throughout OprF. Using a monoclonal antibody (mAb) specific for the malarial epitope, we investigated the effects of positioning and length of the epitope on its antigenicity in the OprF expression vector system. It was demonstrated that the malarial epitope inserted at aa26 was significantly more reactive with the epitope-specific mAb (i.e., more antigenic) when assayed in the context of whole cells whereas those at aa213 and aa290 were more antigenic when assayed in the OM. The malarial epitope inserted at aa188 and aa196 was moderately antigenic, while this epitope inserted at aa215 and aa310 showed low antigenicity with the same mAb in both whole cell and OM assays. For two insertion sites, aa26 and aa213, we demonstrated that the insertion of multiple copies of the epitope enhanced reactivity with the malarial epitope-specific mAb. These data are discussed with respect to the local OprF sequences into which the epitope was inserted.

L6 ANSWER 13 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:405424 CAPLUS

DOCUMENT NUMBER: 122:158350

TITLE: TH1 cells trigger tumor necrosis factor  
alpha-mediated hypersensitivity to *Pseudomonas aeruginosa* after adoptive transfer into SCID mice

AUTHOR(S): Frueh, Reinhard; Blum, Barbara; Mossmann, Horst; Domdey, Horst; von Specht, Bernd-Ulrich

CORPORATE SOURCE: Chirurgische Universitaetsklinik, Chirurgische forschung, Freiburg, 79106, Germany

SOURCE: Infect. Immun. (1995), 63(3), 1107-12  
CODEN: INFIBR; ISSN: 0019-9567

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Recent expts. have shown that .gamma. interferon (IFN-.gamma.), either administered or induced in vivo, e.g., by certain bacteria, is a key mediator in inducing hypersensitivity to bacterial lipopolysaccharides. The source of endogenous IFN-.gamma. in this

context (natural killer vs. TH1 cells) has not been investigated yet. To investigate the role of **antigen-specific**, IFN- $\gamma$ -producing TH1 cells in murine *Pseudomonas aeruginosa* infection, a murine TH1 cell line was propagated in vitro by using recombinant *P. aeruginosa* outer membrane protein I. Adoptive transfer expts. were performed by i.v. injection of various amts. of TH1 cells into *P. aeruginosa*-challenged SCID mice. Adoptive transfer of 5  $\times 10^6$  T cells into SCID mice followed by an i.p. challenge with 1.4  $\times 10^6$  CFU of live *P. aeruginosa* resulted in the rapid death of the animals within 12 h post-challenge, whereas transfer of lower T-cell doses and saline as a control did not cause any detrimental effects. After challenge with 2.8  $\times 10^6$  CFU of *P. aeruginosa*, similar results were obtained 18 h post-challenge; however, at the end of the 72-h observation period, no significant differences in survival rates were obtained between the groups treated with different amts. of T cells. The rapid death of mice treated with 5  $\times 10^6$  T cells was reflected by 860-fold-elevated levels of tumor necrosis factor  $\alpha$  (TNF- $\alpha$ ) present in serum 2 h post-challenge, whereas no significant differences in TNF- $\alpha$  serum levels were detectable in mice treated with lower doses of T cells or with saline. Pretreatment of T-cell-reconstituted SCID mice with neutralizing anti-IFN- $\gamma$  monoclonal antibodies completely protected mice from bacterial challenge and reduced TNF- $\alpha$  levels in serum. The authors conclude that under the exptl. conditions described here, IFN- $\gamma$ - and interleukin-2-producing TH1 cells represent an important trigger mechanism inducing TNF- $\alpha$ -mediated hypersensitivity to bacterial endotoxin.

L6 ANSWER 14 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:398135 CAPLUS

DOCUMENT NUMBER: 122:185213

TITLE: Serum IgG response to *Burkholderia cepacia* outer membrane antigens in cystic fibrosis: Assessment of cross-reactivity with *Pseudomonas aeruginosa*

AUTHOR(S): Lacy, David E.; Smith, Anthony W.; Stableforth, David E.; Smith, Grace; Weller, Peter H.; Brown, Michael R. W.

CORPORATE SOURCE: Royal Liverpool Children's NHS Trust, Liverpool, UK

SOURCE: FEMS Immunol. Med. Microbiol. (1995), 10(3-4), 253-62

CODEN: FIMIEV; ISSN: 0928-8244

DOCUMENT TYPE: Journal

LANGUAGE: English

AB *B. cepacia* (*Pseudomonas cepacia*) is now recognized as an important pathogen in cystic fibrosis patients, and several reports have suggested that sputum-culture-proven colonization occurs despite the presence of specific antibody. To establish the use of antibody studies as diagnostic and prognostic indicators of *B. cepacia* infection, the authors examd. the IgG response to *B. cepacia* outer membrane proteins and lipopolysaccharide in patients also colonized with *P. aeruginosa*. The *B. cepacia* strains were grown in a modified iron-depleted chem. defined medium and outer membrane components examd. by SDS-PAGE and immunoblotting. IgG were detected against *B. cepacia* outer membrane antigens, which were not diminished by extensive preadsorption with *P. aeruginosa*. The response to *B.*

cepacia O-antigen could be readily removed by adsorption of serum either with *B. cepacia* whole cells or purified LPS, whereas the authors were unable to adsorb anti-outer membrane protein antibodies using *B. cepacia* whole cells. The inability to adsorb anti-outer membrane protein antibodies using *B. cepacia* whole cells maybe due to non-exposed surface epitopes. Several *B. cepacia* sputum-culture neg. patients colonized with *P. aeruginosa* had antibodies directed against *B. cepacia* outer membrane protein. Apparently, there is a specific anti-*B. cepacia* LPS IgG response, which is not due to antibodies cross-reactive with *P. aeruginosa*. The studies indicate that much of the *B. cepacia* anti-outer membrane protein response is specific and not attributable to reactivity against co-migrating LPS.

L6 ANSWER 15 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:279726 CAPLUS

DOCUMENT NUMBER: 122:103459

TITLE: Epitope mapping of the *Pseudomonas aeruginosa* major outer membrane porin protein OprF

AUTHOR(S): Rawling, Eileen G.; Martin, Nancy L.; Hancock, Robert E. W.

CORPORATE SOURCE: Dep. Microbiol., Univ. British Columbia, Vancouver, BC, V6T 1Z3, Can.

SOURCE: Infect. Immun. (1995), 63(1), 38-42

CODEN: INFIBR; ISSN: 0019-9567

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The *Pseudomonas aeruginosa* major outer membrane protein OprF has been proposed for use as a vaccine and as a target for immunotherapeutic and diagnostic monoclonal antibodies. The well-conserved epitopes for 10 surface-reactive, OprF-specific monoclonal antibodies were localized by both overlapping peptide anal. and immunodetection of OprF peptides generated by cyanogen bromide and the protease papain. Three of the monoclonal antibodies bound to specific overlapping octapeptides, which had been synthesized on 160 pins to cover the entire 326 amino acids of OprF. The highest reactivities was as follows: MA7-1 to the pin with attached peptide GTYETGNK (amino acids 55 to 62), MA7-2 to NLADFMKQ (amino acids 237 to 244), and MA5-8 to TAEGRAIN (amino acids 307 to 314). The other monoclonal antibodies showed no reactivity, indicating that they do not recognize linear epitopes. Two polyclonal sera were also tested and demonstrated weak reactivity with discrete regions of OprF, suggesting that the majority of antibodies produced might recognize conformational epitopes. Utilizing defined peptides generated with cyanogen bromide and papain, the conformational epitopes recognized by the seven monoclonal antibodies were localized to regions that were 42 to 90 amino acids long. These regions were located on two adjacent loops in the middle of an amended structural model of OprF.

L6 ANSWER 16 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:241408 CAPLUS

DOCUMENT NUMBER: 122:232258

TITLE: Use of oligonucleotide probes to analyze the homology of the oprF gene among clinical and heterologous immunotype strains of *Pseudomonas aeruginosa*

AUTHOR(S): Kermani, Pouneh; Peloquin, Luc; Lagace,

09/359426

Jacqueline  
CORPORATE SOURCE: Univ. of Montreal, Montreal, PQ, H3C 3J7, Can.  
SOURCE: Mol. Cell. Probes (1994), 8(5), 395-400  
CODEN: MCPRE6; ISSN: 0890-8508

DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The conservation of the *oprF* gene among 25 clin. *Pseudomonas aeruginosa* strains and a set of 17 serotype-specific representative strains of the international antigen typing scheme (IATS) was analyzed by dot-blotting using five specific oligonucleotide probes. The oligo 1, 2, 3, 4, 5 correspond to five different regions of the *oprF* gene and hybridized strongly with, resp., 88%, 88%, 76%, 94% and 71% of the IATS strains and 88%, 96%, 92%, 88% and 92% of the clin. strains. A parallel study performed with the whole *oprF* gene showed a lack of specificity of this probe; indeed, the probe hybridized not only with the 42 *Pseudomonas aeruginosa* strains but also with *Escherichia coli* and *Salmonella minnesota*. This study suggests that the gene sequence encoding protein F is not totally conserved among *Pseudomonas aeruginosa* strains.

L6 ANSWER 17 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:184650 CAPLUS

DOCUMENT NUMBER: 120:184650

TITLE: Use of protein OprF for bacterial cell surface expression of oligopeptides and production of vaccines

INVENTOR(S): Hancock, Robert E. W.; Wong, Rebecca

PATENT ASSIGNEE(S): University of British Columbia, Can.

SOURCE: PCT Int. Appl., 43 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9324636	A1	19931209	WO 1993-CA227	19930527
W: CA				

PRIORITY APPLN. INFO.: US 1992-891495 19920529

AB A coding sequence for at least the amino terminal portion of an **outer membrane protein** (such as *Pseudomonas aeruginosa* gene *oprF* protein) in which .gtoreq.1 restriction enzyme sites have been inserted for ligation of a coding sequence for a peptide **antigen**, and/or to which such a peptide **antigen** coding sequence may be fused is described. This sequence may be expressed in Gram-neg. bacteria to produce vaccines or to identify peptides which might be useful in diagnosis of disease. A series of 11 plasmids, each contg. the *oprF* gene with linker sequences inserted into a different site, were prepd. A sequence encoding a malaria epitope was inserted into these sites, and the chimeric genes were expressed in *Escherichia coli*. The recombinant *E. coli* reacted with two malaria-specific monoclonal antibodies.

L6 ANSWER 18 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1993:5272 CAPLUS

Searcher : Shears 308-4994



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DOCUMENT NUMBER: 118:5272  
TITLE: Synthetic peptides representing epitopes of outer membrane protein F of *Pseudomonas aeruginosa* that elicit antibodies reactive with whole cells of heterologous immunotype strains of *P. aeruginosa*  
AUTHOR(S): Hughes, Eileen E.; Gilleland, Linda B.; Gilleland, H. E., Jr.  
CORPORATE SOURCE: Sch. Med., Louisiana State Univ., Shreveport, LA, 71130, USA  
SOURCE: Infect. Immun. (1992), 60(9), 3497-503  
CODEN: INFIBR; ISSN: 0019-9567  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB By using the published amino acid sequence for mature **outer membrane protein F** of *Pseudomonas aeruginosa*, a computer-assisted anal. was performed to identify sites with potential as surface-exposed, **antigenic** regions located throughout the length of the protein mol. Synthetic peptides 13 to 15 amino acid residues in length were synthesized for 10 such regions. Mice were immunized with each of the 10 synthetic peptides conjugated to keyhole limpet hemocyanin. An ELISA of the antisera was performed by using each of the synthetic peptides as the ELISA antigen to verify that IgG antibodies capable of reacting with the peptide used as immunogen were elicited by each peptide. Each of the antipeptide antisera was screened for the presence of IgG antibodies that could bind to the surface of intact cells of strains representing the seven heterologous Fisher-Devlin immunotypes of *P. aeruginosa* by use of an ELISA with whole cells of the various strains as the ELISA antigen. Three peptides elicited antibodies capable of reacting with whole cells of all seven immunotype strains. Peptide 10, corresponding to amino acid residues 305 to 318, elicited whole-cell-reactive antibodies at high titers. Peptide 9, corresponding to amino acid residues 261 to 274, elicited whole-cell-reactive antibodies at more intermediate titers. Peptide 7, corresponding to amino acid residues 219 to 232, elicited such antibodies only at low titers. The carboxy-terminal portion of the mature protein appears to be the immunodominant portion. In particular, peptides 10 (NATAEGRAINRRVE) and 9 (TDAYNQKLSERRAN) appear to have potential for use as immunogens in a synthetic vaccine for immunoprophylaxis against infections caused by *P. aeruginosa*. Antisera from mice immunized with either peptide 9 or 10 mediated opsonophagocytic uptake by human polymorphonuclear leukocytes of wild-type cells of *P. aeruginosa* but exhibited no opsonic activity against a protein F-deficient mutant of *P. aeruginosa*.

L6 ANSWER 19 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1992:171717 CAPLUS  
DOCUMENT NUMBER: 116:171717  
TITLE: The Gram-negative outer membrane: structure, biochemistry and vaccine potential  
AUTHOR(S): Owen, Peter  
CORPORATE SOURCE: Moyne Inst., Trinity Coll., Dublin, Israel  
SOURCE: Biochem. Soc. Trans. (1992), 20(1), 1-6  
CODEN: BCSTB5; ISSN: 0300-5127  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: English

Searcher : Shears 308-4994

09/359426

AB A review with 52 refs. emphasizing 2 components of the bacterial outer membrane which have/may have vaccinogenic potential, i.e., the O-antigen of *Pseudomonas aeruginosa* and a novel outer membrane protein (OMP) of *Escherichia coli* termed antigen 43.

L6 ANSWER 20 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:530236 CAPLUS

DOCUMENT NUMBER: 113:130236

TITLE: Protection against experimental *Pseudomonas aeruginosa* infection by recombinant *P. aeruginosa* lipoprotein I expressed in *Escherichia coli*

AUTHOR(S): Finke, Matthias; Duchene, Michael; Eckhardt, Ansley; Domdey, Horst; Von Specht, Bernd Ulrich

CORPORATE SOURCE: Chir. Universitaetsklin., Chir. Forsch., Freiburg/Br., 7800, Fed. Rep. Ger.

SOURCE: Infect. Immun. (1990), 58(7), 2241-4  
CODEN: INFIBR; ISSN: 0019-9567

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Lipoprotein I (OprI) is one of the major proteins of the outer membrane of *P. aeruginosa*. OprI is a candidate for a vaccine against *P. aeruginosa*, because it cross-reacts antigenically in all serotype strains of the International Antigenic Typing Scheme. The authors recently cloned and expressed the gene coding for OprI in *Escherichia coli*. This heterologously expressed OprI was used successfully to immunize mice against *P. aeruginosa*. In addn., OprI from serogroup 12 of *P. aeruginosa* was highly purified by preparative isoelec. focusing and used for immunization of mice. Both vaccines protected the mice against a challenge with a four- to five-fold 50% LD of *P. aeruginosa*.

L6 ANSWER 21 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:96842 CAPLUS

DOCUMENT NUMBER: 112:96842

TITLE: Monoclonal antibody to *Pseudomonas aeruginosa* antigen OMP  
-19

INVENTOR(S): Ouchi, Hiroshi; Otsuka, Hiroshi; Higuchi, Atsuko; Yokota, Shinichi; Noguchi, Hiroshi; Kozuki, Tsuneo; Kato, Masuhiro; Okuda, Takao

PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan; Sumitomo Pharmaceuticals Co., Ltd.

SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 01193300	A2	19890803	JP 1988-17958	19880127
AB	The title monoclonal antibody, useful for clin. therapy and diagnosis, is produced by the conventional hybridoma method. The hybridoma is designated as hybridoma K-1H5. The monoclonal antibody				

Searcher : Shears 308-4994

administered i.p. to *P. aeruginosa*-infected mice markedly controlled the infection.

L6 ANSWER 22 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1989:187240 CAPLUS

DOCUMENT NUMBER: 110:187240

TITLE: Cloning and characterization of cDNAs coding for the heavy and light chains of a monoclonal antibody specific for *Pseudomonas aeruginosa* outer membrane protein I

AUTHOR(S): Marget, Matthias; Eckhardt, Ansley; Ehret, Werner; Von Specht, Bernd Ulrich; Duchene, Michael; Domdey, Horst

CORPORATE SOURCE: Lab. Mol. Biol., Ludwig-Maximilians-Univ. Muenchen, Martinsried, 8033, Fed. Rep. Ger.

SOURCE: Gene (1988), 74(2), 335-45  
CODEN: GENED6; ISSN: 0378-1119

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A set of 7 monoclonal antibodies (MAB) directed against outer membrane proteins of *P. aeruginosa* has been examd. by Western blot anal., indirect immunofluorescence tests and subclass typing. The hybridoma cell line secreting MAB 6A4, which reacts with **outer membrane protein I**, belongs to the IgG2a subclass and crossreacts with the 17 *P. aeruginosa* serotypes as listed in the International **Antigenic** Typing System, was selected as source for the prepn. of poly(A)+ RNA which in turn was used as template for cDNA synthesis and cloning. Full length cDNA clones of the .gamma. heavy chain as well as the .kappa. light chain were obtained and characterized by nucleotide sequence anal. The complete cDNA sequences coding for the heavy and light chains will be the prerequisite for the construction and heterologous expression of a chimeric human-mouse monoclonal antibody which might be used in therapy of *P. aeruginosa* infections.

L6 ANSWER 23 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1988:418131 CAPLUS

DOCUMENT NUMBER: 109:18131

TITLE: Cloning of the *Pseudomonas aeruginosa* outer membrane porin protein P gene: evidence for a linked region of DNA homology

AUTHOR(S): Siehnel, Richard J.; Worobec, Elizabeth A.; Hancock, Robert E. W.

CORPORATE SOURCE: Dep. Microbiol., Univ. British Columbia, Vancouver, BC, V6T 1W5, Can.

SOURCE: J. Bacteriol. (1988), 170(5), 2312-18  
CODEN: JOBAAY; ISSN: 0021-9193

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The gene encoding the outer membrane phosphate-selective porin protein P from *P. aeruginosa* was cloned into *Escherichia coli*. The protein product was expressed and transported to the outer membrane of an *E. coli* *phoE* mutant and assembled into functional trimers. Expression of a product of the correct mol. wt. was confirmed by sodium dodecyl sulfate-polyacrylamide gel electrophoresis and Western blot (immunoblot) anal., using polyclonal antibodies to protein P monomer and trimer forms. Protein P trimers were partially purified from the *E. coli* clone and shown to form channels

with the same conductance as those formed by protein P from *P. aeruginosa*. The location and orientation of the protein P-encoding (*oprP*) gene on the cloned DNA was identified by three methods: (1) mapping the insertion point of transposon Tn501 in a previously isolated *P. aeruginosa* protein P-deficient mutant; (2) hybridization of restriction fragments from the cloned DNA to an oligonucleotide pool synthesized on the basis of the amino-terminal protein sequence of protein P; and (3) fusion of a PstI fragment of the cloned DNA to the amino terminus of the  $\beta$ -galactosidase gene of pUC8, producing a fusion protein that contained protein P-antigenic epitopes. Structural analysis of the cloned DNA and *P. aeruginosa* chromosomal DNA revealed the presence of two adjacent PstI fragments which cross-hybridized, suggesting a possible gene duplication. The P-related (PR) region hybridized to the oligonucleotide pool described above. When the PstI fragment which contained the PR region was fused to the  $\beta$ -galactosidase gene of pUC8, a fusion protein was produced which reacted with a protein P-specific antiserum. However, the restriction endonuclease patterns of the PR region and the *oprP* gene differed significantly beyond the amino-terminal one-third of the two genes.

L6 ANSWER 24 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1986:624150 CAPLUS

DOCUMENT NUMBER: 105:224150

TITLE: Immunochemistry of *Pseudomonas aeruginosa* outer membrane proteins

AUTHOR(S): Mutharia, Lucy Muthoni

CORPORATE SOURCE: Univ. British Columbia, Vancouver, BC, Can.

SOURCE: (1985) No pp. Given Avail.: NLC  
From: Diss. Abstr. Int. B 1986, 47(4), 1412-13

DOCUMENT TYPE: Dissertation

LANGUAGE: English

AB Unavailable

L6 ANSWER 25 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1986:589042 CAPLUS

DOCUMENT NUMBER: 105:189042

TITLE: Polyclonal and monoclonal antibody therapy for experimental *Pseudomonas aeruginosa* pneumonia

AUTHOR(S): Pennington, James E.; Small, Gloria J.; Lostrom, Mark E.; Pier, Gerald B.

CORPORATE SOURCE: Dep. Med., Brigham and Women's Hosp., Boston, MA, 02115, USA

SOURCE: Infect. Immun. (1986), 54(1), 239-44  
CODEN: INFIBR; ISSN: 0019-9567

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A human IgG prep., enriched in antibodies to lipopolysaccharide (LPS) *P. aeruginosa* antigens (PA-IGIV) and murine monoclonal antibodies (MAB) to *P. aeruginosa* Fisher immunotype-1 (IT-1) LPS antigen and outer membrane protein F (porin), were evaluated for therapeutic efficacy in a guinea pig model of *P. aeruginosa* pneumonia. The concn. of antibodies to IT-1 LPS was 7.6  $\mu$ g/mL in PA-IGIV and 478  $\mu$ g/mL in the IT-1 MAB prep. No antibody to IT-1 was detected in MAB to porin. Animals were infected by intratracheal instillation of IT-1 *P. aeruginosa* and then treated 2

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h later with i.v. infusions of PA-IGIV, IT-1 MAb, or porin MAb. Control groups received i.v. albumin, and routinely died from pneumonia. Both PA-IGIV (500 mg/kg) and IT-1 MAb (.gtoreq.2.5 mg/kg) treatment resulted in increased survival, and also improved intrapulmonary killing of bacteria. Porin MAb failed to protect from fatal pneumonia. IT-1 MAb treatment produced more survivals than did PA-IGIV treatment but only at dosages of MAb resulting in serum antibody concns. greater than those achieved with PA-IGIV. PA-IGIV and IT-MAb demonstrated in vitro and in vivo (posttreatment guinea pig serum) opsonophagocytic activity for the IT-1 challenge strain. However, the polyclonal prepn. required complement, whereas the MAb did not. Thus, passive immunization with polyclonal hyperimmune *P. aeruginosa* globulin or with MAb to LPS antigens may be useful in the treatment of acute *P. aeruginosa* pneumonia. The relative efficacies of such preps. may be limited, however, by their type-specific LPS antibody concns.

L6 ANSWER 26 OF 26 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1984:83900 CAPLUS

DOCUMENT NUMBER: 100:83900

TITLE: Antibody response of infected mice to outer membrane proteins of *Pseudomonas aeruginosa*  
AUTHOR(S): Hedstrom, Richard C.; Pavlovskis, Olgerts R.; Galloway, Darrell R.

CORPORATE SOURCE: Nav. Med. Res. Inst., Bethesda, MD, 20814, USA  
SOURCE: Infect. Immun. (1984), 43(1), 49-53  
CODEN: INFIBR; ISSN: 0019-9567

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The antibody response to outer membrane proteins of *P. aeruginosa* was studied in mice exptl. infected with *P. aeruginosa* 220. The infection consisted of an abscess established by s.c. injection of bacteria. Sera from these mice were analyzed by indirect radioimmunopptn. and immunoblot methods for the presence of antibodies to proteins of the isolated outer membrane. Sera from mice 14 days postinfection contained antibodies directed against proteins that comigrated with the major outer membrane proteins F (porin), H2, and I (lipoprotein). A 16,000-dalton protein that did not appear to be a major outer membrane protein also elicited a significant antibody response in some instances. Thus, mice, in response to infection, elicit an immunol. response to outer membrane proteins of *P. aeruginosa*.

FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, JICST-EPLUS, JAPIO, PHIC, PHIN, TOXLIT, TOXCENTER' ENTERED AT 09:51:24 ON 01 MAR 2002)

L7 162 S L5

L8 67 DUP REM L7 (95 DUPLICATES REMOVED)

L8 ANSWER 1 OF 67 MEDLINE DUPLICATE 1

ACCESSION NUMBER: 2002000739 MEDLINE

DOCUMENT NUMBER: 21614930 PubMed ID: 11748189

TITLE: Bacterial lipoprotein-based vaccines induce tumor necrosis factor-dependent type 1 protective immunity against *Leishmania major*.

AUTHOR: Cote-Sierra Javier; Bredan Amin; Toldos Carmen M; Stijlemans Benoit; Brys Lea; Cornelis Pierre; Segovia Manuel; de Baetselier Patrick; Revets Hilde

CORPORATE SOURCE: Department of Immunology, Parasitology and

Searcher : Shears 308-4994

09/359426

SOURCE: Ultrastructure, Flanders Interuniversity Institute  
for Biotechnology, Vrije Universiteit Brussel, Sint  
Genesius Rode, Belgium.  
INFECTION AND IMMUNITY, (2002 Jan) 70 (1) 240-8.  
Journal code: 0246127. ISSN: 0019-9567.  
PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 200201  
ENTRY DATE: Entered STN: 20020102  
Last Updated on STN: 20020125  
Entered Medline: 20020114

AB Immunity against Leishmania major requires rapid induction of a type 1 immune response in which tumor necrosis factor alpha (TNF-alpha) plays an essential role. Hence, vaccination strategies that simulate the protective immune response found in hosts that have recovered from natural infection provide a rational approach to combat leishmaniasis. One method for optimizing the qualitative and quantitative immune responses after vaccination is to use an adjuvant. In this study we demonstrate that the **OprI** lipoprotein (L-**OprI**) from *Pseudomonas aeruginosa* induces a long-term cellular (gamma interferon [IFN-gamma]) and humoral (immunoglobulin G2a) type 1 immune response against a truncated 32-kDa version (COOHgp63) of the 63-kDa major cell surface glycoprotein gp63. By contrast, immunization with COOHgp63 either fused to **OprI** nonlipoprotein or with no adjuvant did not result in the induction of type 1 immune responses. The adjuvanticity of L-**OprI** is strongly dependent on its capacity to induce TNF-alpha, since generation of type 1 immune responses is clearly delayed and impaired in TNF-alpha(-/-) mice. Vaccination with L-**OprI**COOHgp63 fusion protein protected BALB/c mice against L. major infection for at least 19 weeks. Vaccinated mice were largely free of lesions or clearly controlled lesion size on termination of the experiment. The control of disease progression in mice vaccinated with L-**OprI**COOHgp63 was associated with enhancement of **antigen**-specific IFN-gamma production. These data indicate that bacterial lipoproteins constitute appropriate adjuvants to include in vaccines against diseases in which type 1 immune responses are important for protection.

L8 ANSWER 2 OF 67 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD  
DUPLICATE 2

ACCESSION NUMBER: 2001-522552 [57] WPIDS  
DOC. NO. CPI: C2001-156027  
TITLE: Use of major **OprI** lipoprotein of  
*Pseudomonas aeruginosa* or its functional  
fragments as adjuvant to obtain a Th1 type immune  
response against heterologous **antigen**,  
for treating leishmaniasis, leprosy, allergic  
asthma.  
DERWENT CLASS: B04 D16  
INVENTOR(S): CORNELIS, P; DE BAETSELIER, P; REVETS, H  
PATENT ASSIGNEE(S): (VLAA-N) VLAAMS INTERUNIVERSITAIR INST BIOTECHNOG  
COUNTRY COUNT: 94  
PATENT INFORMATION:

PATENT NO	KIND DATE	WEEK	LA	PG
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Searcher : Shears 308-4994

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WO 2001060404 A2 20010823 (200157)\* EN 53  
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC  
MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW  
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE  
DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG  
KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ  
PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN  
YU ZA ZW  
AU 2001048314 A 20010827 (200176)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001060404	A2	WO 2001-EP1673	20010213
AU 2001048314	A	AU 2001-48314	20010213

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2001048314	A Based on	WO 200160404

PRIORITY APPLN. INFO: EP 2000-200589 20000218

AN 2001-522552 [57] WPIDS

AB WO 200160404 A UPAB: 20011005

NOVELTY - Use of major **OprI** lipoprotein of *Pseudomonas aeruginosa* or its functional fragments as an adjuvant to obtain a Th1 type immune response against a heterologous antigen.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) use of a host cell expressing an **OprI**-heterologous antigen fusion protein to obtain a Th1 type immune response against the heterologous antigen;
- (2) manufacture a pharmaceutical composition comprising **OprI** or its functional fragments for obtaining a Th1 type immune response against a heterologous antigen;
- (3) pharmaceutical composition comprising **OprI** and a heterologous antigen, optionally with an excipient;
- (4) pharmaceutical composition comprising **OprI** fused to a heterologous antigen, optionally with an excipient; and
- (5) pharmaceutical composition comprising a host cell expressing a **OprI**-heterologous antigen fusion protein, optionally with an excipient.

ACTIVITY - Antiparasitic; antileprotic; antiallergic; antiasthmatic; immunosuppressive.

MECHANISM OF ACTION - Th1 type immune response elicitor; vaccine.

To evaluate the potential adjuvant capacity of the lipoprotein I of *Pseudomonas aeruginosa* to heterologous proteins and the combination of its lipid moiety to the immunogenicity of the chimeric **OprI**-COOHgp63 lipoprotein, three different recombinant proteins were produced: the lipidated L-**OprI**COOHgp63, the non-lipidated NL-**OprI**COOHgp63 and the COOHgp63. All three recombinant proteins contained the COOH-terminal domain of the glycoprotein Gp63 of *Leishmania major*, which contained the

host-protective T cell epitopes. Mice (BALB/c, C57BL/6) were immunized subcutaneously once or three times with the recombinant proteins to respectively analyze the early cellular immune responses in the draining lymph nodes, and the secondary humoral immune responses, elicited against the heterologous COOHgp63 antigen. In vitro restimulation with the COOHgp63 of lymph node cells from BALB/c mice immunized once with either type of lipoprotein construct or COOHgp63, resulted in a clear induction of IL-10 secretion. Only lymph node cells from L-OprICOOHgp63-immunized BALB/c mice secreted interferon (IFN)- gamma. In the C57BL/6 strain, only lymph node cells from animals immunized with L-OprICOOHgp63 produced very high levels of IFN- gamma upon COOHgp63 restimulation. The induction of IFN- gamma production was sustained after three immunizations as evidenced by the production of high IFN- gamma levels in the spleen compartment, whereas the induction of interleukin (IL)-10 production was completely abrogated. When IL-4 was measured in the same culture supernatants, a secretion pattern similar to IL-10 was seen. However the levels of IL-4 production were either undetectable or much lower than the levels of IL-10 was seen. However the levels of IL-4 production were either undetectable or much lower than the levels of IL-10. Antibody isotype responses against the COOHgp63 protein were also analyzed in immunized animals for BALB/c and C57BL/6, three immunizations with the lipidated **OprI**-COOHgp63 induced a significant production of COOHgp63-specific IgG2a, IgG3, IgG2b and IgG1 antibodies. In contrast, the non-lipidated **OprI**-COOHgp63 and the COOHgp63 only induced significant levels of IgG1 anti-Gp63 antibodies and very low or undetectable levels of IgG2a, IgG3 and IgG2b in either mouse strain. There was no detectable IgA in the serum samples while the levels of IgM were marginal. Collectively, these immunization experiments demonstrated that the lipid tail of OprICOOHgp63 chimeric proteins elicit potent cellular (IFN- gamma) and humoral (IgG2a and IgG3 antibodies) Type-1 immune responses.

USE - As an adjuvant to obtain a Th1 type immune response against a heterologous antigen such as antigen gp63 of Leishmania major, for treating a disease such as leishmaniasis, TBC (undefined), leprosy, mycotin infection, allergic asthma or an autoimmune disease, in which the natural Th1 response is insufficient and/or in which the immune response is polarizes towards Th2 response (claimed).  
Dwg.0/16

L8 ANSWER 3 OF 67 TOXLIT

ACCESSION NUMBER: 2001:28842 TOXLIT

DOCUMENT NUMBER: CA-135-029894M

TITLE: Novel Pseudomonas aeruginosa protein sequences and their uses as antigen/immunogen/vaccine, in detection/diagnosis, and screening anti-microbial targets.

AUTHOR: Cripps AW; Kyd JM; Thomas LD

SOURCE: (2001). PCT Int. Appl. PATENT NO. 0140473 06/07/2001 (Provalis UK Limited).

CODEN: PIXXD2.

PUB. COUNTRY: UNITED KINGDOM

DOCUMENT TYPE: Patent

FILE SEGMENT: CA

LANGUAGE: English

OTHER SOURCE: CA 135:29894



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ENTRY MONTH: 200107

AB The present inventors have employed protein purifn. methods to isolate homogeneous preps. of both **outer membrane proteins (OMPs)** and cytosolic proteins. Using a method of Zwittergent extn. with modifications to liq. column chromatog. and gel electrophoresis steps, several proteins have been purified, identified and assessed for their vaccine potential. The proteins were denoted by their mol. mass and their identity confirmed by amino-terminal sequencing. The inventors have isolated and identified proteins from a prepn. of *P.aeruginosa*. These proteins are designated Pa13, Pa20 (ACP), Pa 40 (amidase), Pa45 and Pa80. Pa20 was ascribed as ACP because it had homol. with a protein from *Pseudomonas syringa* and *P. aeruginosa*. Pa40 had homol. with a known *P. aeruginosa* aliph. amidase. The proteins designated Pa13, Pa45 and Pa80 were not found following this search. The invention further relates to the uses of **antigenic proteins** derived from *Pseudomonas aeruginosa* in the treatment, prophylaxis and diagnosis of *P. aeruginosa* infection.

L8 ANSWER 4 OF 67 MEDLINE DUPLICATE 3  
ACCESSION NUMBER: 2001248169 MEDLINE  
DOCUMENT NUMBER: 21189282 PubMed ID: 11292786  
TITLE: Protection against *Pseudomonas aeruginosa* chronic lung infection in mice by genetic immunization against outer membrane protein F (OprF) of *P. aeruginosa*.  
AUTHOR: Price B M; Galloway D R; Baker N R; Gilleland L B; Staczek J; Gilleland H E Jr  
CORPORATE SOURCE: Department of Microbiology, The Ohio State University, Columbus, Ohio 43210, USA.  
CONTRACT NUMBER: RO1-AI44424 (NIAID)  
SOURCE: INFECTION AND IMMUNITY, (2001 May) 69 (5) 3510-5. Journal code: GO7; 0246127. ISSN: 0019-9567.  
PUB. COUNTRY: United States  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 200105  
ENTRY DATE: Entered STN: 20010517  
Last Updated on STN: 20010517  
Entered Medline: 20010510

AB The *Pseudomonas aeruginosa* major constitutive outer membrane porin protein **OprF**, which has previously been shown to be a protective **antigen**, was targeted as a DNA vaccine candidate. The **oprF** gene was cloned into plasmid vector pVR1020, and the plasmid vaccines were delivered to mice by biolistic (gene gun) intradermal inoculation. Antibody titers in antisera from immunized mice were determined by enzyme-linked immunosorbent assay, and the elicited antibodies were shown to be specifically reactive to **OprF** by immunoblotting. The immunoglobulin G (IgG) immune response was predominantly of the IgG1 isotype. Sera from DNA vaccine-immunized mice had significantly greater opsonic activity in opsonophagocytic assays than did sera from control mice. Following the initial immunization and two consecutive boosts, each at 2-week intervals, protection was demonstrated in a mouse model of chronic pulmonary infection by *P. aeruginosa*. Eight days postchallenge, both lungs were

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removed and examined. A significant reduction in the presence of severe macroscopic lesions, as well as in the number of bacteria present in the lungs, was seen. Based on these findings, genetic immunization with **oprF** has potential for development as a vaccine to protect humans against infection by *P. aeruginosa*

L8 ANSWER 5 OF 67 MEDLINE MEDLINE DUPLICATE 4  
ACCESSION NUMBER: 2000193540 MEDLINE  
DOCUMENT NUMBER: 20193540 PubMed ID: 10727884  
TITLE: Chimeric animal and plant viruses expressing epitopes of outer membrane protein F as a combined vaccine against *Pseudomonas aeruginosa* lung infection.  
AUTHOR: Gilleland H E; Gilleland L B; Staczek J; Harty R N; Garcia-Sastre A; Palese P; Brennan F R; Hamilton W D; Bendahmane M; Beachy R N  
CORPORATE SOURCE: Department of Microbiology and Immunology, Louisiana State University Medical Center, School of Medicine in Shreveport, Shreveport, LA 71130-3932, USA.. hgille@lsu-mc.edu  
CONTRACT NUMBER: AI 27161 (NIAID)  
SOURCE: R01-AI44424 (NIAID)  
FEMS IMMUNOLOGY AND MEDICAL MICROBIOLOGY, (2000 Apr) 27 (4) 291-7.  
Journal code: BP1; 9315554. ISSN: 0928-8244.  
PUB. COUNTRY: Netherlands  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 200005  
ENTRY DATE: Entered STN: 20000518  
Last Updated on STN: 20000518  
Entered Medline: 20000511

AB Outer membrane protein F of *Pseudomonas aeruginosa* has vaccine efficacy against infection by *P. aeruginosa* as demonstrated in a variety of animal models. Through the use of synthetic peptides, three surface-exposed epitopes have been identified. These are called peptides 9 (aa 261-274 in the mature F protein, TDAYNQKLSERRAN), 10 (aa 305-318, NATAEGRINRRVE), and 18 (aa 282-295, NEYGVGGRRVNAV). Both the peptide 9 and 10 epitopes are protective when administered as a vaccine. In order to develop a vaccine that is suitable for use in humans, including infants with cystic fibrosis, the use of viral vector systems to present the protective epitopes has been investigated. An 11-amino acid portion of epitope 10 (AEGRAINRRVE) was successfully inserted into the antigenic B site of the hemagglutinin on the surface of influenza virus. This chimeric influenza virus protects against challenge with *P. aeruginosa* in the mouse model of chronic pulmonary infection. Attempts to derive a chimeric influenza virus carrying epitope 9 have been unsuccessful. A chimeric plant virus, cowpea mosaic virus (CPMV), with epitopes 18 and 10 expressed in tandem on the large coat protein subunit (CPMV-PAE5) was found to elicit antibodies that reacted exclusively with the 10 epitope and not with epitope 18. Use of this chimeric virus as a vaccine afforded protection against challenge with *P. aeruginosa* in the mouse model of chronic pulmonary infection. Chimeric CPMVs with a single peptide containing epitopes 9 and 18 expressed on either of

the coat proteins are in the process of being evaluated. Epitope 9 was successfully expressed on the coat protein of tobacco mosaic virus (TMV), and this chimeric virus is protective when used as a vaccine in the mouse model of chronic pulmonary infection. However, initial attempts to express epitope 10 on the coat protein of TMV have been unsuccessful. Efforts are continuing to construct chimeric viruses that express both the 9 and 10 epitopes in the same virus vector system. Ideally, the use of a vaccine containing two epitopes of protein F is desirable in order to greatly reduce the likelihood of selecting a variant of *P. aeruginosa* that escapes protective antibodies in immunized humans via a mutation in a single epitope within protein F. When the chimeric influenza virus containing epitope 10 and the chimeric TMV containing epitope 9 were given together as a combined vaccine, the immunized mice produced antibodies directed toward both epitopes 9 and 10. The combined vaccine afforded protection against challenge with *P. aeruginosa* in the chronic pulmonary infection model at approximately the same level of efficacy as provided by the individual chimeric virus vaccines. These results prove in principle that a combined chimeric viral vaccine presenting both epitopes 9 and 10 of protein F has vaccine potential warranting continued development into a vaccine for use in humans.

L8 ANSWER 6 OF 67 MEDLINE DUPLICATE 5  
 ACCESSION NUMBER: 2000084956 MEDLINE  
 DOCUMENT NUMBER: 20084956 PubMed ID: 10617794  
 TITLE: Conformation-dependent antibody response to  
 Pseudomonas aeruginosa outer membrane proteins  
 induced by immunization in humans.  
 AUTHOR: Lee N; Ahn B; Jung S B; Kim Y G; Kim H; Park W J  
 CORPORATE SOURCE: R and D Center of Bioscience, Institute of Science  
 and Technology, Cheiljedang Corp., Ichon, Kyonggi,  
 South Korea.. ng\_lee@cheiljedang.com  
 SOURCE: FEMS IMMUNOLOGY AND MEDICAL MICROBIOLOGY, (2000 Jan)  
 27 (1) 79-85.  
 Journal code: BP1; 9315554. ISSN: 0928-8244.  
 PUB. COUNTRY: Netherlands  
 Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 200002  
 ENTRY DATE: Entered STN: 20000309  
 Last Updated on STN: 20000309  
 Entered Medline: 20000224

AB Outer membrane proteins (OMPs  
 ) of pathogenic bacteria have been used as protective  
 antigens in developing bacterial vaccines. In the present  
 study, we compared the antibody responses to a *Pseudomonas*  
*aeruginosa* OMP vaccine elicited in humans and  
 rabbits by immunization. Immunization with the vaccine induced high  
 titers of serum IgG antibody both in rabbits and humans but  
 reactivities of the induced antibodies with the OMPs were  
 different. The rabbit immune sera recognized most of the  
 OMPs in the vaccine both in immunoblot and  
 immunoprecipitation analyses. In contrast, a great variation in band  
 pattern and intensity was observed among the human immune sera in  
 immunoblot analysis, but not in immunoprecipitation analysis.  
 Denaturation of the OMPs did not affect the binding

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activity of the rabbit immune sera as determined by ELISA, but substantially reduced those of the human immune sera and anti-OMP IgG purified from a pooled normal human plasma. These data suggest that antibody response to *P. aeruginosa* OMPs elicited by immunization in humans is mainly directed against discontinuous or conformation-dependent epitopes, which should be taken into account in developing vaccines, especially for OMP-derived synthetic peptides.

L8 ANSWER 7 OF 67 MEDLINE MEDLINE DUPLICATE 6  
ACCESSION NUMBER: 1999210724 MEDLINE  
DOCUMENT NUMBER: 99210724 PubMed ID: 10194820  
TITLE: A recombinant hybrid outer membrane protein for vaccination against *Pseudomonas aeruginosa*.  
AUTHOR: Knapp B; Hundt E; Lenz U; Hungerer K D; Gabelsberger J; Domdey H; Mansouri E; Li Y; von Specht B U  
CORPORATE SOURCE: Chiron Behring GmbH & Co, Marburg, Germany..  
SOURCE: knapp2@mbg.chiron-behring.com  
VACCINE, (1999 Mar 26) 17 (13-14) 1663-6.  
Journal code: X60; 8406899. ISSN: 0264-410X.  
PUB. COUNTRY: ENGLAND: United Kingdom  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199905  
ENTRY DATE: Entered STN: 19990607  
Last Updated on STN: 19990607  
Entered Medline: 19990527

AB Among the numerous targets which can be used for the development of vaccines against *Pseudomonas aeruginosa* we focused on the outer membrane proteins OprF and OprI. The C-terminal part of OprF from aa 190 to aa 350 was investigated for its conservation and its localization of B-cell epitopes. A hybrid protein which combines the protective epitopes of OprF and OprI was expressed in *E. coli* and was proven to be highly protective against an intraperitoneal challenge with *P. aeruginosa* by active immunization of immunocompromised mice as well as by passive immunization of SCID mice with specific antisera. A purification procedure of the N-terminal His-tagged hybrid antigen was established using immobilized-metal-affinity chromatography. To evaluate its safety and immunogenicity the recombinant protein was purified for the immunization of human volunteers. The OprF/OprI hybrid protein is considered to be a candidate for a vaccine against *P. aeruginosa*.

L8 ANSWER 8 OF 67 MEDLINE MEDLINE DUPLICATE 7  
ACCESSION NUMBER: 1999036466 MEDLINE  
DOCUMENT NUMBER: 99036466 PubMed ID: 9820580  
TITLE: Identification of a 25-aminoacid sequence from the major African swine fever virus structural protein VP72 recognised by porcine cytotoxic T lymphocytes using a lipoprotein based expression system.  
AUTHOR: Leitao A; Malur A; Cornelis P; Martins C L  
CORPORATE SOURCE: Laboratorio de Doencas Infecciosas, CIISA, Faculdade de Medicina Veterinaria, Lisboa, Portugal.  
SOURCE: JOURNAL OF VIROLOGICAL METHODS, (1998 Nov) 75 (1) 113-9.

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JOURNAL code: HQR; 8005839. ISSN: 0166-0934.  
PUB. COUNTRY: Netherlands  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199901  
ENTRY DATE: Entered STN: 19990209  
Last Updated on STN: 19990209  
Entered Medline: 19990128

AB Identification of African swine fever virus (ASFV) proteins recognised by cytotoxic T lymphocytes (CTL) from swine surviving ASFV/NH/P68 infection was assessed using expression vectors based on the *Pseudomonas aeruginosa* outer membrane lipoprotein I gene (*oprI*). Viral **antigens** expressed as fusion lipoproteins were shown to be taken efficiently by porcine blood-derived macrophages incubated with **outer membrane protein** preparations from transformed *E. coli*. To assess recognition by CTL the fusion lipoprotein-treated macrophages were used as targets in <sup>51</sup>Cr release microcytotoxicity assays. Using this approach it was shown that the amino acid sequence HKPHQSKPILTDENDTQRTCSHTNP from the major structural ASFV protein (VP72), encoded by a recombinant clone (pVUB72) is presented by macrophages, which are lysed under restriction of SLA class I **antigens**. Overall, the results demonstrate that the *oprI* based vectors are valuable tools to study ASFV-specific CTL activity.

L8 ANSWER 9 OF 67 MEDLINE DUPLICATE 8  
ACCESSION NUMBER: 97237729 MEDLINE  
DOCUMENT NUMBER: 97237729 PubMed ID: 9084184  
TITLE: A phosphate-starvation-inducible outer-membrane protein of *Pseudomonas fluorescens* Ag1 as an immunological phosphate-starvation marker.  
AUTHOR: Leopold K; Jacobsen S; Nybroe O  
CORPORATE SOURCE: Department of Ecology and Molecular Biology, Royal Veterinary and Agricultural University, Frederiksberg C, Denmark.  
SOURCE: MICROBIOLOGY, (1997 Mar) 143 ( Pt 3) 1019-27.  
JOURNAL code: BXW; 9430468. ISSN: 1350-0872.  
PUB. COUNTRY: ENGLAND: United Kingdom  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
OTHER SOURCE: PIR-P80694  
ENTRY MONTH: 199705  
ENTRY DATE: Entered STN: 19970609  
Last Updated on STN: 19970609  
Entered Medline: 19970529

AB A phosphate-starvation-inducible **outer-membrane protein** of *Pseudomonas fluorescens* Ag1, expressed at phosphate concentrations below 0.08-0.13 mM, was purified and characterized. The purification method involved separation of **outer-membrane proteins** by SDS-PAGE and extraction of the protein from nitrocellulose or PVDF membranes after electrotransfer of proteins to the membranes. The N-terminal amino acid sequence of the purified protein, called Psil, did not show homology to any known proteins, and in contrast to the phosphate-specific porin *OprP* of *P. aeruginosa*

its mobility in SDS-PAGE was not affected by solubilization temperature. An antiserum against Psil recognized a protein of M, 55,000 in four other *P. fluorescens* strains among 24 tested strains representing *Pseudomonas* rRNA homology group I, showing **antigenic** heterogeneity within this group. A method for immunofluorescence microscopy involving cell permeabilization was adapted to visualize cell-specific expression of Psil in *P. fluorescens* exposed to limiting amounts of phosphate. This approach should be useful for further exploration of Psil as a marker to study the availability of phosphate to *P. fluorescens* in natural environments.

L8 ANSWER 10 OF 67 MEDLINE DUPLICATE 9  
 ACCESSION NUMBER: 1998020898 MEDLINE  
 DOCUMENT NUMBER: 98020898 PubMed ID: 9382755  
 TITLE: Pilin-based anti-*Pseudomonas* vaccines: latest developments and perspectives.  
 AUTHOR: Hahn H; Lane-Bell P M; Glasier L M; Nomellini J F; Bingle W H; Paranchych W; Smit J  
 CORPORATE SOURCE: Department of Biological Sciences, University of Alberta, Edmonton, Canada.  
 SOURCE: BEHRING INSTITUTE MITTEILUNGEN, (1997 Feb) (98) 315-25.  
 PUB. COUNTRY: Journal code: 9KI; 0367532. ISSN: 0301-0457. GERMANY: Germany, Federal Republic of  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 199711  
 ENTRY DATE: Entered STN: 19971224  
 Last Updated on STN: 19990129  
 Entered Medline: 19971110

AB Among the several adhesins produced by *Pseudomonas aeruginosa* (Pa), the type-4 pilus promotes the majority of the adherence capability of the bacterium to epithelial cells and it is a major virulence factor in an AB.Y/SnJ mouse infection model. Vaccines targeting the disulfide loop (DSL) adherence binding domain of the pilin protein should therefore provide an effective protection against initial colonization and infection with Pa. To selectively elicit adherence blocking antibodies, the pilin DSL domain was chosen as peptide **antigen** for the construction of recombinant protein and live vaccines. While synthetic peptide-carrier protein conjugates provided some strain-specific protection, chimeric proteins with N- or C-terminally fused pilin DSL peptides did not engender protective IgG titers mice. Integral fusions of the pilin DSL peptide with the minor coat protein of filamentous phage or surface exposed regions of an **outer membrane protein** resulted in a display of the peptide on the surface of the phage particles and bacterial cells respectively. However, in immunization studies neither of these live vaccines were effective immunogens. The paracrystalline S-layer of *Caulobacter crescentus* combines several advantages of an effective **antigen** surface display system. Recombinant S-layer proteins with singlecopy insertions of a pilin peptide did not engender significant IgG titers, whereas multiple tandem insertions of the same peptide increased the serum IgG response in mice a thousand times. Multiple insertions of DSL peptides from different frequent pilin prototypes may be an interesting alternative for a recombinant

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cross-protective anti-Pseudomonas vaccine.

L8 ANSWER 11 OF 67 MEDLINE DUPLICATE 10  
ACCESSION NUMBER: 1998020897 MEDLINE  
DOCUMENT NUMBER: 98020897 PubMed ID: 9382754  
TITLE: A hybrid outer membrane  
protein antigen for vaccination  
against Pseudomonas aeruginosa.  
AUTHOR: Gabelsberger J; Knapp B; Bauersachs S; Enz U I; von  
Specht B U; Domdey H  
CORPORATE SOURCE: Institut fur Biochemie, Ludwig-Maximilians-  
Universitat Munchen, Germany.  
SOURCE: BEHRING INSTITUTE MITTEILUNGEN, (1997 Feb) (98)  
302-14.  
Journal code: 9KI; 0367532. ISSN: 0301-0457.  
PUB. COUNTRY: GERMANY: Germany, Federal Republic of  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199711  
ENTRY DATE: Entered STN: 19971224  
Last Updated on STN: 19971224  
Entered Medline: 19971110

AB Recently a hybrid protein containing parts of the outer  
membrane proteins OprF (aa 190-342) and  
OprI (aa 21-83) from Pseudomonas aeruginosa fused  
to the glutathione-S-transferase was shown to protect mice against a  
975-fold 50% lethal dose of P. aeruginosa. To omit the use  
of the GST-protein, the hybrid protein OprF-OprI  
was expressed in E. coli using distinct modifications which have not  
to be eliminated after its expression. Using different signal  
peptides, the yield of the hybrid protein OprF-  
OprI in E. coli could be increased to 30% of the total cell  
protein, however, only a very small amount of the hybrid preprotein  
was processed and could be isolated from the periplasm of the host.  
A construct containing an N-terminal extension of 11 amino acids  
from the original OprF gene gave rise to a significantly  
higher expression in the cytoplasm. Purification was facilitated by  
the addition of a five histidine tag at the C-terminus. An even  
higher expression was obtained by a construct in which a six  
histidine tag was attached to the N-terminus of the hybrid protein.  
The N-terminal extended OprF-OprI as well as the  
N-terminal his-tagged OprF-OprI hybrid  
antigens were purified by immobilized-metal affinity  
chromatography under native and denaturing conditions and can now be  
tested for protectivity against P. aeruginosa in animal  
model systems.

L8 ANSWER 12 OF 67 MEDLINE DUPLICATE 11  
ACCESSION NUMBER: 1998020896 MEDLINE  
DOCUMENT NUMBER: 98020896 PubMed ID: 9382753  
TITLE: Chimeric influenza viruses incorporating epitopes of  
outer membrane protein F as a vaccine against  
pulmonary infection with Pseudomonas aeruginosa.  
AUTHOR: Gilleland H E Jr; Gilleland L B; Staczek J; Harty R  
N; Garcia-Sastre A; Engelhardt O G; Palese P  
CORPORATE SOURCE: Department of Microbiology and Immunology, Louisiana  
State University Medical Center, Shreveport

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SOURCE: 71130-3932, USA.  
BEHRING INSTITUTE MITTEILUNGEN, (1997 Feb) (98)  
291-301.  
Journal code: 9KI; 0367532. ISSN: 0301-0457.  
PUB. COUNTRY: GERMANY: Germany, Federal Republic of  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199711  
ENTRY DATE: Entered STN: 19971224  
Last Updated on STN: 19971224  
Entered Medline: 19971110

AB Peptide 10 (NATAEGRAINRRVE, residues 305-318 of mature protein F) is one of two linear B-cell epitopes within **outer membrane protein F** of *Pseudomonas aeruginosa* both of which have been shown to elicit whole cell-reactive antibodies and to afford protection in animal models against *P. aeruginosa* infection. Influenza A virus was chosen as a vector to present this epitope in a human-compatible vaccine. Various lengths of the peptide 10 epitope ranging from a 5-mer (GRAIN), 7-mer (AINRRVE), 8-mer (TAEGRAIN), 9-mer (GRAINRRVE), 11-mer (AEGRAINRRVE) to a 12-mer (TAEGRAINRRVE) were attempted to be presented into the **antigenic B-site** of the hemagglutinin (HA) of live recombinant influenza virus. Using PCR, DNA sequences encoding these various peptide 10 lengths were inserted into the HA gene of influenza A/WSN/33 virus. By using a reverse-genetics transfection system, RNA transcribed in vitro from these chimeric HA genes was reassorted into infectious virus. To date chimeric viruses have been rescued and purified containing the peptide 10 5-mer, 7-mer, 8-mer, and 11-mer. RT-PCR and sequencing have confirmed the presence of *P. aeruginosa* sequences in the HA RNA segment of each chimeric virus. Each of the four chimeric viruses produced to date was used to immunize mice to determine the ability of each chimeric virus to elicit antibodies reactive with whole cells of *P. aeruginosa*. The immunization protocol consisted of a series of three intranasal inoculations, followed by two intramuscular injections of the chimeric virus. The chimeric virus incorporating the 11-mer elicited IgG antibodies that reacted with various immunotype strains of *P. aeruginosa* in a whole cell ELISA at titers of 80 to 2,560, whereas the chimeric virus incorporating the 8-mer elicited whole cell-reactive IgG antibodies at titers of 320 to 2,560. These data suggest that these two chimeric viruses may have vaccine efficacy against *P. aeruginosa* infection. These studies may result in the development of a chimeric influenza virus-protein F vaccine which would prove to be suitable for use in children with cystic fibrosis for the prevention of pulmonary colonization of these children with *P. aeruginosa*.

L8 ANSWER 13 OF 67 MEDLINE DUPLICATE 12  
ACCESSION NUMBER: 1998020895 MEDLINE  
DOCUMENT NUMBER: 98020895 PubMed ID: 9382752  
TITLE: Potential of protein OprF of *Pseudomonas* in bivalent vaccines.  
AUTHOR: Hancock R E; Wong R  
CORPORATE SOURCE: Department of Microbiology and Immunology, University of British Columbia, Vancouver.  
SOURCE: BEHRING INSTITUTE MITTEILUNGEN, (1997 Feb) (98)  
283-90. Ref: 32

Searcher : Shears 308-4994



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PUB. COUNTRY: Journal code: 9KI; 0367532. ISSN: 0301-0457.  
GERMANY: Germany, Federal Republic of  
Journal; Article; (JOURNAL ARTICLE)  
General Review; (REVIEW)  
(REVIEW, TUTORIAL)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199711  
ENTRY DATE: Entered STN: 19971224  
Last Updated on STN: 19971224  
Entered Medline: 19971110

AB **Outer membrane protein OprF**  
is the major outer membrane of *Pseudomonas aeruginosa*, and has been expressed to a similar high level in *Escherichia coli* from the cloned gene. It contains conserved surface epitopes, and antibodies against these epitopes can protect mice from *P. aeruginosa* infections. To develop the **oprF** gene as a carrier for foreign epitopes, linker insertion mutagenesis has been performed to introduce 12 nucleotide inserts marked by a unique PstI site. Nine such sites can accept and express a foreign epitope within the surface loop regions of **OprF** on the surface of *E. coli*. The **antigenicity** at a given insertion site, and the influence of the length of a model repeating malarial epitope on **antigenicity**, have been shown to be site-specific and apparently dependent on the nature of the surrounding amino acids at the insertion site. Immunization of mice with **OprF** containing a highly **antigenic** inserted epitope led to an epitope-specific antibody response. These data suggest that **OprF** has potential for use as a carrier for foreign epitopes.

L8 ANSWER 14 OF 67 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
DUPLICATE 13

ACCESSION NUMBER: 1998:269368 BIOSIS  
DOCUMENT NUMBER: PREV199800269368  
TITLE: Immunochemical detection of dissolved proteins and their source bacteria in marine environments.  
AUTHOR(S): Suzuki, Satoru (1); Kogure, Kazuhiro; Tanoue, Eiichiro  
CORPORATE SOURCE: (1) Dep. Aquac., Kochi Univ., Nankoku, Kochi 783 Japan  
SOURCE: Marine Ecology Progress Series, (Nov. 17, 1997) Vol. 158, No. 0, pp. 1-9.  
ISSN: 0171-8630.  
DOCUMENT TYPE: Article  
LANGUAGE: English

AB In order to expand upon the discovery that specific proteins survive in seawater as dissolved protein and that the origin of these proteins is bacterial porin, we surveyed marine environments and cultured bacteria for the presence of homologues of 2 kinds of bacterial porins. Antisera against the N-terminus of the **OprP** porin of *Pseudomonas aeruginosa* and against the whole molecule of the Omp35La porin of *Listonella (Vibrio) anguillarum* were prepared and used as probes in Western blot analysis. In all samples collected in the subarctic and subtropical Pacific Ocean and the Antarctic Ocean, proteins reactive to the antisera were detected. The molecular masses of **OprP** and Omp35La are 48 and 33 to 37 kDa respectively; detected proteins in

seawater samples were generally also of similar molecular mass. However, dissolved proteins as well as **outer membrane proteins** from cultured bacteria with different molecular masses were detected using the antisera. This indicates that dissolved proteins and bacterial **outer membrane proteins** distinct from **OprP** and **Omp35La** contain similar **antigenic** structures to **OprP** and **Omp35La**. Fluorescent-antibody staining revealed that bacterial cells that were stainable with antisera were present in natural bacterial assemblages throughout the entire water column. Present observations strongly suggest that bacterial porins are a major source of dissolved proteins.

L8 ANSWER 15 OF 67 MEDLINE DUPLICATE 14  
 ACCESSION NUMBER: 97086508 MEDLINE  
 DOCUMENT NUMBER: 97086508 PubMed ID: 8932702  
 TITLE: Novel O-polysaccharide expression, as a lipid A-core-free form, in a lipopolysaccharide-core-defective mutant of *Pseudomonas aeruginosa*.  
 AUTHOR: Yokota S  
 CORPORATE SOURCE: Sumitomo Pharmaceuticals Research Center, Konohanaku, Osaka, Japan.  
 SOURCE: MICROBIOLOGY, (1996 Feb) 142 ( Pt 2) 289-97.  
 Journal code: BXW; 9430468. ISSN: 1350-0872.  
 PUB. COUNTRY: ENGLAND: United Kingdom  
 Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 199612  
 ENTRY DATE: Entered STN: 19970128  
 Last Updated on STN: 19970128  
 Entered Medline: 19961231  
 AB *Pseudomonas aeruginosa* PML14e is a mutant strain, isolated from strain PML14 (Honna serotype I), that is resistant to all types of R-pyocins. PML14e completely lacked glucose and rhamnose as components of the lipopolysaccharide (LPS) outer core region. Whereas the O-polysaccharide attachment site on the LPS core was considered to be absent, PML14e was agglutinable with anti-serotype-I antibodies. The O-polysaccharide of PML14e was recovered in the supernatant after ultracentrifugation of the aqueous layer from a hot phenol/water extraction. Chromatographic behaviour and chemical analysis indicated that the PML14e O-polysaccharide was not linked to the lipid A. 1H-NMR spectroscopy indicated that the structure of the PML14e O-polysaccharide was the same as that of the O-polysaccharide from PML14. The above evidence indicated that the O-polysaccharide is expressed on the cell surface of the mutant strain PML14e as the lipid A-free form. To examine the nature of the cell surface, the accessibility of monoclonal antibodies (mAbs) against cell surface **antigens** was tested by enzyme-linked immunosorbent assay. An anti-lipid A mAb and an anti-**outer-membrane protein** mAb, the epitopes for which are considered to be exposed on rough strains, bound to a greater extent to the PML14e cells than to two other LPS-core-defective rough mutants, PML14b and PML14d. Whereas these mutants appeared to have lesser defects in the LPS core, they expressed less O-polysaccharide than PML14e. The results indicated that the epitopes exposed on rough strains, such as lipid A and **outer-membrane proteins**, were mainly

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hindered by covalently linked core oligosaccharide rather than by the O-polysaccharide chain.

L8 ANSWER 16 OF 67 MEDLINE DUPLICATE 15  
ACCESSION NUMBER: 96291666 MEDLINE  
DOCUMENT NUMBER: 96291666 PubMed ID: 8764483  
TITLE: The effect of the length of a malarial epitope on its  
**antigenicity** and immunogenicity in an epitope  
presentation system using the *Pseudomonas*  
**aeruginosa** outer membrane  
**protein OprF** as the carrier.  
AUTHOR: Wong R S; Hancock R E  
CORPORATE SOURCE: Department of Microbiology and Immunology, University  
of British Columbia, Vancouver, Canada..  
n-cianciotto@nwu.edu  
SOURCE: FEMS MICROBIOLOGY LETTERS, (1996 Jul 1) 140 (2-3)  
209-14.  
Journal code: FML; 7705721. ISSN: 0378-1097.  
PUB. COUNTRY: Netherlands  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199610  
ENTRY DATE: Entered STN: 19961025  
Last Updated on STN: 19980206  
Entered Medline: 19961015

AB This study showed that the **antigenicity** of a malarial  
epitope increased with the length of the epitope when inserted at  
positions aa26 (amino acid position 26) and aa196, but not at aa213,  
of the *Pseudomonas aeruginosa* major outer  
**membrane protein OprF** (326 amino acids).  
Immunization studies showed that a 19-aa epitope was significantly  
more immunogenic than a 7-aa epitope when inserted at aa26 of  
**OprF**, while neither an 11- nor a 19-aa epitope fused to the  
C-terminus of glutathione S-transferase was immunogenic.

L8 ANSWER 17 OF 67 MEDLINE DUPLICATE 16  
ACCESSION NUMBER: 1998299953 MEDLINE  
DOCUMENT NUMBER: 98299953 PubMed ID: 9636324  
TITLE: Development of new cloning vectors for the production  
of immunogenic outer membrane fusion proteins in  
*Escherichia coli*.  
AUTHOR: Cornelis P; Sierra J C; Lim A Jr; Malur A;  
Tungpradabkul S; Tazka H; Leitao A; Martins C V; di  
Perna C; Brys L; De Baetseller P; Hamers R  
CORPORATE SOURCE: Laboratorium Algemene Biologie, Vrije Universiteit  
Brussel Vlaams Instituut Biotechnologie, Belgium..  
pcornel@vub.ac.be  
SOURCE: BIO/TECHNOLOGY, (1996 Feb) 14 (2) 203-8.  
Journal code: AL1; 8309273. ISSN: 0733-222X.  
PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: B  
ENTRY MONTH: 199807  
ENTRY DATE: Entered STN: 19980731  
Last Updated on STN: 19980731  
Entered Medline: 19980717

AB The *Pseudomonas aeruginosa* lipoprotein gene (*oprI*) was modified by cloning an in-frame polylinker in both orientations at the end of *oprI*. The resulting plasmids pVUB1 and pVUB2 allow high lipoprotein production in *E. coli* after IPTG induction. The modified lipoproteins are present in the outer membrane and surface-exposed. Outer membrane-bound fusion proteins of different sizes were produced and used to generate antibodies without use of adjuvant. An 87 bp DNA fragment from the vp72 capsid protein gene of African Swine Fever virus (ASFV) and the entire *Leishmania* major glycoprotein gp63 gene were expressed in this system. Finally, a fusion lipoprotein containing a 16 amino acid epitope from the pre-S2b region of Hepatitis B virus (HBV) was presented by an antigen-presenting cell line to a T-cell hybridoma while the corresponding cross-linked S2b peptide was not. The results suggest that *OprI*-based fusion proteins can be used to generate both humoral and cellular immune responses.

L8 ANSWER 18 OF 67 TOXLIT

ACCESSION NUMBER: 1995:68147 TOXLIT

DOCUMENT NUMBER: CA-122-283857H

TITLE: Expression vectors using components of a lipoprotein gene to present a foreign protein on the surface of a microbial host.

AUTHOR: Hamers R; Cornelis P

SOURCE: (1995). PCT Int. Appl. PATENT NO. 95 04079 02/09/95.

PUB. COUNTRY: Belgium

DOCUMENT TYPE: Patent

FILE SEGMENT: CA

LANGUAGE: French

OTHER SOURCE: CA 122:283857

ENTRY MONTH: 199509

AB Cloning and expression vectors for the presentation of a foreign protein on the surface of a bacterial host are described. The vector uses the regulatory elements of the gene for a lipoprotein to direct expression of the foreign gene and elements from the coding region of the lipoprotein gene to direct integration of the protein into the cell membrane with presentation of the foreign protein on the cell surface. The lipoprotein is not derived from *Escherichia coli* with the preferred lipoprotein coming from *Pseudomonas aeruginosa*. The construction of such a vector using the *oprI* gene of *P. aeruginosa* is demonstrated. A family of vectors differing by their polylinkers was developed and their utility in the presentation of a no. of proteins on the surface of *E. coli* is demonstrated. Strains presenting antigens were used to raise antibodies.

L8 ANSWER 19 OF 67 MEDLINE

DUPLICATE 17

ACCESSION NUMBER: 95286287 MEDLINE

DOCUMENT NUMBER: 95286287 PubMed ID: 7539410

TITLE: Synthetic peptides representing two protective, linear B-cell epitopes of outer membrane protein F of *Pseudomonas aeruginosa* elicit whole-cell-reactive antibodies that are functionally pseudomonad specific.

AUTHOR: Gilleland L B; Gilleland H E Jr

CORPORATE SOURCE: Department of Microbiology and Immunology, Louisiana State University Medical Center, School of Medicine in Shreveport 71130-3932, USA.

09/359426

SOURCE: INFECTION AND IMMUNITY, (1995 Jun) 63 (6) 2347-51.  
Journal code: GO7; 0246127. ISSN: 0019-9567.  
PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199507  
ENTRY DATE: Entered STN: 19950713  
Last Updated on STN: 19960129  
Entered Medline: 19950705

AB Peptide 9 (TDAYNQKLSERRAN) and peptide 10 (NATAEGRAINRRVE) represent surface-exposed epitopes of **outer membrane protein F** of *Pseudomonas aeruginosa*. Rats immunized with four intramuscular inoculations on days 0, 14, 28, and 42 with either peptide 9 or peptide 10 conjugated to keyhole limpet hemocyanin were afforded protection against pulmonary lesions when examined 7 days subsequent to challenge (day 56) via intratracheal inoculation of *P. aeruginosa*-containing agar beads. Peptide 9 shares considerable homology with other **OmpA-related outer membrane proteins** in various bacteria, whereas peptide 10 displays little homology with these other proteins. Antisera directed to peptide 9 reacted weakly with cell envelope proteins from the various other **OmpA-associated bacteria** upon immunoblot analysis. However, antisera directed to peptide 10 reacted only with *Neisseria gonorrhoeae* cell envelope proteins upon immunoblot analysis. Antisera to both peptides 9 and 10 reacted at minimal titers with whole cells of the various other bacteria in a whole-cell enzyme-linked immunosorbent assay (ELISA) but antisera to each of the peptides reacted at high titers when various strains of *P. aeruginosa* were used as the ELISA **antigen**. Antibodies to peptides 9 and 10 were protective, reactive to all strain of *P. aeruginosa* tested except for a protein F-deficient mutant, and functionally specific against pseudomonads.

L8 ANSWER 20 OF 67 MEDLINE  
ACCESSION NUMBER: 95285072 MEDLINE  
DOCUMENT NUMBER: 95285072 PubMed ID: 7767563  
TITLE: Virulence factors in the colonization and persistence of bacteria in the airways.  
AUTHOR: van Alphen L; Jansen H M; Dankert J  
CORPORATE SOURCE: Department of Medical Microbiology, University of Amsterdam, The Netherlands.  
SOURCE: AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE, (1995 Jun) 151 (6) 2094-9; discussion 2099-100. Ref: 52  
Journal code: BZS; 9421642. ISSN: 1073-449X.  
PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)  
General Review; (REVIEW)  
(REVIEW, TUTORIAL)  
LANGUAGE: English  
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals  
ENTRY MONTH: 199506  
ENTRY DATE: Entered STN: 19950713  
Last Updated on STN: 19950713  
Entered Medline: 19950630  
AB *Haemophilus influenzae*, *Streptococcus pneumoniae*, *Moraxella*

DUPLICATE 18

catarrhalis, Staphylococcus aureus, Klebsiella pneumoniae, and Pseudomonas aeruginosa are commonly isolated from sputum specimens of patients with lower respiratory tract infections. Haemophilus influenzae, S. pneumoniae, and M. catarrhalis have several pathogenic properties in common. These bacteria are able to interact with mucus, to exert ciliotoxic activity, to adhere to bronchial epithelial cells, and to invade airway epithelium. Haemophilus influenzae and S. pneumoniae strains persist for many months in the respiratory tract of patients with chronic obstructive pulmonary disease (COPD), despite the specific antibodies present in serum and sputum against the persistent strain. Especially during exacerbations persistent strains with changes in their antigenic composition are isolated. Among H. influenzae strains, the antigenic characteristics of the outer membrane protein composition vary. Variation in S. pneumoniae occurs in capsular polysaccharides, the major immunogens of this bacterium. Such variations affect the efficacy of the antibody-mediated defense mechanisms against the bacteria. Between exacerbations, particularly H. influenzae, S. pneumoniae strains are recovered from the sputum of patients with COPD. Recovery may continue for periods up to 2 yr, although not continuously. Besides ineffective antibody-mediated defense mechanisms, it is likely that hiding of the bacteria in tissue contributes to the persistence of these bacteria in patients with COPD.

L8 ANSWER 21 OF 67 MEDLINE DUPLICATE 19  
 ACCESSION NUMBER: 95172707 MEDLINE  
 DOCUMENT NUMBER: 95172707 PubMed ID: 7868234  
 TITLE: TH1 cells trigger tumor necrosis factor  
 alpha-mediated hypersensitivity to Pseudomonas  
 aeruginosa after adoptive transfer into SCID mice.  
 AUTHOR: Fruh R; Blum B; Mossman H; Domdey H; von Specht B U  
 CORPORATE SOURCE: Chirurgische Universitätsklinik, Chirurgische  
 Forschung, Freiburg, Germany.  
 SOURCE: INFECTION AND IMMUNITY, (1995 Mar) 63 (3) 1107-12.  
 Journal code: GO7; 0246127. ISSN: 0019-9567.  
 PUB. COUNTRY: United States  
 Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 199503  
 ENTRY DATE: Entered STN: 19950407  
 Last Updated on STN: 19970203  
 Entered Medline: 19950330  
 AB Recent experiments have shown that gamma interferon (IFN-gamma),  
 either administered or induced in vivo, e.g., by certain bacteria,  
 is a key mediator in inducing hypersensitivity to bacterial  
 lipopolysaccharides. The source of endogenous IFN-gamma in this  
 context (natural killer versus TH1 cells) has not been investigated  
 yet. In order to investigate the role of antigen-specific,  
 IFN-gamma-producing TH1 cells in murine Pseudomonas  
 aeruginosa infection, a murine TH1 cell line was propagated  
 in vitro by using recombinant P. aeruginosa outer  
 membrane protein I. Adoptive transfer experiments  
 were performed by intravenous injection of various amounts of TH1  
 cells into P. aeruginosa-challenged SCID mice. Adoptive  
 transfer of 5 x 10(6) T cells into SCID mice followed by an

intraperitoneal challenge with  $1.4 \times 10(6)$  CFU of live *P. aeruginosa* resulted in the rapid death of the animals within 12 h postchallenge, whereas transfer of lower T-cell doses and saline as a control did not cause any detrimental effects. After challenge with  $2.8 \times 10(6)$  CFU of *P. aeruginosa*, similar results were obtained 18 h postchallenge; however, at the end of the 72-h observation period, no significant differences in survival rates were obtained between the groups treated with different amounts of T cells. The rapid death of mice treated with  $5 \times 10(6)$  T cells was reflected by 860-fold-elevated levels of tumor necrosis factor alpha (TNF-alpha) present in serum 2 h postchallenge, whereas no significant differences in TNF-alpha serum levels were detectable in mice treated with lower doses of T cells or with saline. Pretreatment of T-cell-reconstituted SCID mice with neutralizing anti-IFN-gamma monoclonal antibodies completely protected mice from bacterial challenge and reduced TNF-alpha levels in serum. We conclude that under the experimental conditions described here, IFN-gamma- and interleukin-2-producing TH1 cells represent an important trigger mechanism inducing TNF-alpha-mediated hypersensitivity to bacterial endotoxin.

L8 ANSWER 22 OF 67 MEDLINE DUPLICATE 20  
 ACCESSION NUMBER: 96157381 MEDLINE  
 DOCUMENT NUMBER: 96157381 PubMed ID: 8574841  
 TITLE: Identification of **outer membrane proteins** as target **antigens** of *Pseudomonas aeruginosa* Homma serotype M.  
 AUTHOR: Yokota S  
 CORPORATE SOURCE: Sumitomo Pharmaceuticals Research Center, Osaka, Japan.  
 SOURCE: CLINICAL AND DIAGNOSTIC LABORATORY IMMUNOLOGY, (1995 Nov) 2 (6) 747-52.  
 Journal code: CB7; 9421292. ISSN: 1071-412X.  
 PUB. COUNTRY: United States  
 Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 199603  
 ENTRY DATE: Entered STN: 19960321  
 Last Updated on STN: 19960321  
 Entered Medline: 19960312

AB *Pseudomonas aeruginosa* is routinely serotyped in Japan by using the Homma scheme. The serotypes (O serotypes) are based on the chemical structure of the O-polysaccharide portion of the lipopolysaccharide (LPS). However, the nature of the Homma serotype M **antigen** has remained obscure because strains classified as serotype M usually have the rough phenotype. I characterized the target **antigen** of serotype M. The results of Western blotting (immunoblotting) showed that commercially available typing monoclonal antibody (MAb) against serotype M specifically bound to **outer membrane protein (Opr) G** and that typing rabbit antiserum specific for serotype M mainly contained antibodies against **Oprs F** and H2. These **Oprs** were distributed among all *P. aeruginosa* strains tested, including the serotype standard, serotype M and nontypeable strains, and a series of LPS-core-defective mutants derived from strain PAC1. However, the rough mutants derived from strain PAC1 agglutinated with the anti-serotype M antibodies,

whereas the smooth strains did not. LPS preparations from serotype M strains possessed few or no polysaccharide chains. These strains had higher levels of binding activity with anti-serotype M MAb, as well as with anti-lipid A MAb, which specifically bound to the cell surface of the rough-natured gram-negative bacterial strains with high activity. The anti-serotype M antiserum also contained rough-LPS-specific antibodies, but the epitope was distributed among only a few strains. The results suggested that the **Opr**s acted as the serotype M **antigen** and that LPS did not. In conclusion, the rough strains agglutinated with anti-**Opr** antibodies and were distinguished as serotype M from the smooth strains of other serotypes, because the antibodies were accessible to the cell surface lacking O polysaccharides. I supposed that Homma serotype M is an index of the rough nature of *P. aeruginosa* strains rather than one of the O serotypes.

L8 ANSWER 23 OF 67 MEDLINE DUPLICATE 21  
 ACCESSION NUMBER: 96014427 MEDLINE  
 DOCUMENT NUMBER: 96014427 PubMed ID: 7580798  
 TITLE: Use of synthetic peptides to identify surface-exposed, linear B-cell epitopes within outer membrane protein F of *Pseudomonas aeruginosa*.  
 AUTHOR: Gilleland H E Jr; Hughes E E; Gilleland L B; Matthews-Greer J M; Staczek J  
 CORPORATE SOURCE: Department of Microbiology and Immunology, Louisiana State University Medical Center, School of Medicine, Shreveport 71130-3932, USA.  
 SOURCE: CURRENT MICROBIOLOGY, (1995 Nov) 31 (5) 279-86. Journal code: BMW; 7808448. ISSN: 0343-8651.  
 PUB. COUNTRY: United States  
 LANGUAGE: English  
 FILE SEGMENT: B  
 ENTRY MONTH: 199512  
 ENTRY DATE: Entered STN: 19960124  
 Last Updated on STN: 19960124  
 Entered Medline: 19951207  
 AB In a previous study (Hughes EE, Gilleland LB, Gilleland HE Jr. [1992] Infect Immun 60:3497-3503), ten synthetic peptides were used to test for surface-exposed **antigenic** regions located throughout the length of **outer membrane protein F** of *Pseudomonas aeruginosa*. An additional nine peptides of 11-21 amino acid residues in length were synthesized. Antisera collected from mice immunized with each of the 19 synthetic peptides conjugated to keyhole limpet hemocyanin were used to determine which of the peptides had elicited antibodies capable of reacting with the surface of whole cells of the various heterologous Fisher-Devlin immunotypes of *P. aeruginosa*. Cell surface reactivity was measured by an enzyme-linked immunosorbent assay (ELISA) with whole cells of the various immunotypes as the ELISA **antigens** and by opsonophagocytic uptake assays with the various peptide-directed antisera, immunotype 2 *P. aeruginosa* cells, and polymorphonuclear leukocytes of human and murine origin. Three peptides located in the carboxy-terminal portion of protein F elicited antibodies with the greatest cell-surface reactivity. Peptide 9 (TDAYNQKLSERRAN), peptide 10 (NATAEGRAINRRVE), and peptide 18 (NEYGVEGGRVNAV) appear to have sufficient potential for further development as vaccine



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candidates for immunoprophylaxis against infections caused by *P. aeruginosa*. A topological model for the arrangement of protein F within the outer membrane of *P. aeruginosa* is presented.

L8 ANSWER 24 OF 67 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1995:290836 BIOSIS

DOCUMENT NUMBER: PREV199598305136

TITLE: *Pseudomonas aeruginosa* Outer Membrane Protein OprF as an Expression Vector for Foreign Epitopes: The Effects of Length and Positioning on the Antigenicity and Immunogenicity of the Epitope.

AUTHOR(S): Wong, Rebecca S. Y.; Hancock, Bob

CORPORATE SOURCE: University British Columbia, Vancouver, BC Canada

SOURCE: Abstracts of the General Meeting of the American Society for Microbiology, (1995) Vol. 95, No. 0, pp. 266.

Meeting Info.: 95th General Meeting of the American Society for Microbiology Washington, D.C., USA May 21-25, 1995

ISSN: 1060-2011.

DOCUMENT TYPE: Conference

LANGUAGE: English

L8 ANSWER 25 OF 67 MEDLINE

DUPLICATE 22

ACCESSION NUMBER: 95291266 MEDLINE

DOCUMENT NUMBER: 95291266 PubMed ID: 7539670

TITLE: Serum IgG response to Burkholderia cepacia outer membrane antigens in cystic fibrosis: assessment of cross-reactivity with *Pseudomonas aeruginosa*.

AUTHOR: Lacy D E; Smith A W; Stableforth D E; Smith G; Weller P H; Brown M R

CORPORATE SOURCE: Royal Liverpool Children's NHS Trust, UK.

SOURCE: FEMS IMMUNOLOGY AND MEDICAL MICROBIOLOGY, (1995 Feb) 10 (3-4) 253-61.

Journal code: BP1; 9315554. ISSN: 0928-8244.

PUB. COUNTRY: Netherlands

Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199507

ENTRY DATE: Entered STN: 19950720

Last Updated on STN: 19960129

Entered Medline: 19950713

AB *Burkholderia cepacia* (*Pseudomonas cepacia*) is now recognised as an important pathogen in cystic fibrosis patients, and several reports have suggested that sputum-culture-proven colonisation occurs despite the presence of specific antibody. In an attempt to establish the use of antibody studies as diagnostic and prognostic indicators of *B. cepacia* infection, we have examined the IgG response to *B. cepacia* outer membrane proteins and lipopolysaccharide in patients also colonised with *P. aeruginosa*. The *B. cepacia* strains were grown in a modified iron-depleted chemically defined medium and outer membrane components examined by SDS-PAGE and immunoblotting. IgG antibodies were detected against *B. cepacia* outer membrane antigens,

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which were not diminished by extensive preadsorption with *P. aeruginosa*. The response to *B. cepacia* O-antigen could be readily removed by adsorption of serum either with *B. cepacia* whole cells or purified LPS, whereas we were unable to adsorb anti-outer membrane protein antibodies using *B. cepacia* whole cells. The inability to adsorb anti-outer membrane protein antibodies using *B. cepacia* whole cells maybe due to non-exposed surface epitopes. Several *B. cepacia* sputum-culture negative patients colonised with *P. aeruginosa* had antibodies directed against *B. cepacia* outer membrane protein. this study suggests that there is a specific anti-*B. cepacia* LPS IgG response, which is not due to antibodies cross-reactive with *P. aeruginosa*. Our studies indicate that much of the *B. cepacia* anti-outer membrane protein response is specific and not attributable to reactivity against co-migrating LPS.

L8 ANSWER 26 OF 67 MEDLINE DUPLICATE 23  
ACCESSION NUMBER: 95309725 MEDLINE  
DOCUMENT NUMBER: 95309725 PubMed ID: 7540583  
TITLE: *Pseudomonas aeruginosa* outer membrane protein OprF as an expression vector for foreign epitopes: the effects of positioning and length on the antigenicity of the epitope.  
AUTHOR: Wong R S; Wirtz R A; Hancock R E  
CORPORATE SOURCE: Department of Microbiology and Immunology, University of British Columbia, Vancouver, Canada.  
SOURCE: GENE, (1995 May 26) 158 (1) 55-60.  
JOURNAL code: FOP; 7706761. ISSN: 0378-1119.  
PUB. COUNTRY: Netherlands  
JOURNAL; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199507  
ENTRY DATE: Entered STN: 19950807  
Last Updated on STN: 19960129  
Entered Medline: 19950724  
AB OprF, the major outer membrane (OM) protein of *Pseudomonas aeruginosa*, has been proposed to be comprised of a series of beta-strands separated by periplasmic or surface-exposed loop regions. In this study, a simple malarial epitope was used to demonstrate that OprF can be used as an expression vector to present foreign peptide sequences, namely, the 4-amino-acid (aa) repeating epitope (Asn-Ala-Asn-Pro = NANP) of the circumsporozoite protein of the human malarial parasite *Plasmodium falciparum*. Eight permissive sites, that allowed the expression and surface exposure of the malarial epitope, were identified throughout OprF. Using a monoclonal antibody (mAb) specific for the malarial epitope, we investigated the effects of positioning and length of the epitope on its antigenicity in the OprF expression vector system. It was demonstrated that the malarial epitope inserted at aa26 was significantly more reactive with the epitope-specific mAb (i.e., more antigenic) when assayed in the context of whole cells whereas those at aa213 and aa290 were more antigenic when assayed in the OM. The malarial epitope inserted at aa188 and aa196 was moderately antigenic

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, while this epitope inserted at aa215 and aa310 showed low **antigenicity** with the same mAb in both whole cell and OM assays. For two insertion sites, aa26 and aa213, we demonstrated that the insertion of multiple copies of the epitope enhanced reactivity with the malarial epitope-specific mAb. These data are discussed with respect to the local **OprF** sequences into which the epitope was inserted.

L8 ANSWER 27 OF 67 MEDLINE DUPLICATE 24  
ACCESSION NUMBER: 95183079 MEDLINE  
DOCUMENT NUMBER: 95183079 PubMed ID: 7877635  
TITLE: Use of oligonucleotide probes to analyse the homology of the **oprF** gene among clinical and heterologous immunotype strains of *Pseudomonas aeruginosa*.  
AUTHOR: Kermani P; Peloquin L; Lagace J  
CORPORATE SOURCE: University of Montreal, Department of Microbiology and Immunology, Quebec, Canada.  
SOURCE: MOLECULAR AND CELLULAR PROBES, (1994 Oct) 8 (5) 395-400.  
PUB. COUNTRY: ENGLAND: United Kingdom  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199503  
ENTRY DATE: Entered STN: 19950419  
Last Updated on STN: 19950419  
Entered Medline: 19950331

AB The conservation of **oprF** gene among 25 clinical *Pseudomonas aeruginosa* strains and a set of 17 serotype-specific representative strains of the international **antigen** typing scheme (IATS) was analysed by dot-blotting using five specific oligonucleotide probes. The oligo 1, 2, 3, 4, 5 correspond to five different regions of the **oprF** gene and hybridized strongly with respectively 88%, 88%, 76%, 94% and 71% of the IATS strains and 88%, 96%, 92%, 88% and 92% of the clinical strains. A parallel study performed with the whole **oprF** gene showed a lack of specificity of this probe: indeed, the probe hybridized not only with the 42 *Pseudomonas aeruginosa* strains but also with *Escherichia coli* and *Salmonella minnesota*. This study suggests that the gene sequence encoding the protein F is not totally conserved among *Pseudomonas aeruginosa* strains.

L8 ANSWER 28 OF 67 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD  
ACCESSION NUMBER: 1993-405827 [50] WPIDS  
DOC. NO. CPI: C1993-180406  
TITLE: Use of **OprF** protein - in expression of heterologous oligopeptide(s) on gram-negative bacterial cell surface to produce live vaccines and to map antigenic epitope(s).  
DERWENT CLASS: B04 D16  
INVENTOR(S): HANCOCK, R E W; WONG, R  
PATENT ASSIGNEE(S): (UYBR-N) UNIV BRITISH COLUMBIA  
COUNTRY COUNT: 1  
PATENT INFORMATION:

PATENT NO KIND DATE WEEK LA PG

Searcher : Shears 308-4994

09/359426

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WO 9324636 A1 19931209 (199350)\* EN 45  
W: CA

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9324636	A1	WO 1993-CA227	19930527

PRIORITY APPLN. INFO: US 1992-891495 19920529

AN 1993-405827 [50] WPIDS

AB WO 9324636 A UPAB: 19940203

Vaccine comprises bacterial cells expressing one or more heterologous antigens on their surface.

Also claimed are (1) a DNA sequence encoding an amino acid sequence, with one of the following sequences (a) P-N-R1-X-R2C1, (b) P-N1-R1, (c) P-N1-R1-C1, where in (a) P is DNA providing efficient transcription initiation in a host bacterium, N encodes the N-terminal portion of an outer membrane protein (OMP) and contains a bacterial leader sequence for processing and translocation, R1 and R2 are restriction sites for insertion of up to 207 nucleotides encoding an oligopeptide of interest (number of sites is 1-4), X is the central portion of the OMP, and C represents the C-terminal portion of the OMP. In (b) and (c), N1 is the coding sequence of the N-terminus of OMP OprF and permits expression of enough N-terminal amino acids to permit expression of a peptide fused at R1 to be expressed on the OMP surface, and provides the coding sequence of a bacterial leader sequence to allow processing and translocation to the outer membrane, C1 is the actual OprF C-terminus or a synthetic sequence and P and R1 are as above, (2) a plasmid comprising this DNA, (3) Gram-negative bacteria transformed with this plasmid, and (4) plasmid pRW3.

USE/ADVANTAGE - The DNA sequence has sites for insertion of DNA encoding proteins of interest. These proteins are useful as peptide **antigens** on the surface of Gram-negative bacteria which can then be used as live vaccines. It can also be used for mapping of **antigenic** epitopes, identifying sequences of amino acids that constitute epitopes that can be used in the diagnosis of disease, or in the prodn. of specific antibodies against peptide sequences. The vaccine has advantages over other preps. as **OprF** can directly stimulate immunologically important lymphocytes and has vaccine potential against *Pseudomonas aeruginosa* infections, and recombinant **OprF** from *E. coli* has been used to protect against *Pseudomonas* infections.  
Dwg.0/9

L8 ANSWER 29 OF 67 TOXLIT

ACCESSION NUMBER: 1994:51760 TOXLIT

DOCUMENT NUMBER: CA-120-184650N

TITLE: Use of protein OprF for bacterial cell surface expression of oligopeptides and production of vaccines.

AUTHOR: Hancock RE W; Wong R

SOURCE: (1993). PCT Int. Appl. PATENT NO. 93 24636 12/09/93 (University of British Columbia).

PUB. COUNTRY: Canada

Searcher : Shears 308-4994

09/359426

DOCUMENT TYPE: Patent  
FILE SEGMENT: CA  
LANGUAGE: English  
OTHER SOURCE: CA 120:184650  
ENTRY MONTH: 199405

AB A coding sequence for at least the amino terminal portion of an **outer membrane protein** (such as *Pseudomonas aeruginosa* gene **oprF** protein) in which .gtoreq.1 restriction enzyme sites have been inserted for ligation of a coding sequence for a peptide **antigen**, and/or to which such a peptide **antigen** coding sequence may be fused is described. This sequence may be expressed in Gram-neg. bacteria to produce vaccines or to identify peptides which might be useful in diagnosis of disease. A series of 11 plasmids, each contg. the **oprF** gene with linker sequences inserted into a different site, were prepd. A sequence encoding a malaria epitope was inserted into these sites, and the chimeric genes were expressed in *Escherichia coli*. The recombinant *E. coli* reacted with two malaria-specific monoclonal antibodies.

L8 ANSWER 30 OF 67 MEDLINE DUPLICATE 25  
ACCESSION NUMBER: 94049125 MEDLINE  
DOCUMENT NUMBER: 94049125 PubMed ID: 7901733  
TITLE: Characterization of pilQ, a new gene required for the biogenesis of type 4 fimbriae in *Pseudomonas aeruginosa*.  
AUTHOR: Martin P R; Hobbs M; Free P D; Jeske Y; Mattick J S  
CORPORATE SOURCE: Centre for Molecular Biology and Biotechnology, University of Queensland, Brisbane, Australia.  
SOURCE: MOLECULAR MICROBIOLOGY, (1993 Aug) 9 (4) 857-68.  
JOURNAL code: MOM; 8712028. ISSN: 0950-382X.  
PUB. COUNTRY: ENGLAND: United Kingdom  
JOURNAL; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
OTHER SOURCE: GENBANK-L1386; GENBANK-L13865; GENBANK-L13866  
ENTRY MONTH: 199312  
ENTRY DATE: Entered STN: 19940117  
Last Updated on STN: 19950206  
Entered Medline: 19931221

AB Type 4 fimbriae are produced by a variety of pathogens, in which they appear to function in adhesion to epithelial cells, and in a form of surface translocation called twitching motility. Using transposon mutagenesis of *Pseudomonas aeruginosa*, we have identified a new locus required for fimbrial assembly. This locus contains the gene pilQ which encodes a 77 kDa protein with an N-terminal hydrophobic signal sequence characteristic of secretory proteins. pilQ mutants lack the spreading colony morphology characteristic of twitching motility, are devoid of fimbriae, and are resistant to the fimbrial-specific bacteriophage PO4. The pilQ gene was mapped to Spel fragment 2, which is located at 0-5 minutes on the *P. aeruginosa* PAO1 chromosome, and thus it is not closely linked to the previously characterized pilA-D, pilS,R or pilT genes. The pilQ region also contains ponA, aroK and aroB-like genes in an organization very similar to that of corresponding genes in *Escherichia coli* and *Haemophilus influenzae*. The predicted amino acid sequence of PilQ shows homology to the PulD protein of *Klebsiella oxytoca* and related **outer membrane**

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**proteins** which have been found in association with diverse functions in other species including protein secretion, DNA uptake and assembly of filamentous phage. PilQ had the highest overall homology to an outer membrane **antigen** from *Neisseria gonorrhoeae*, encoded by *omc*, that may fulfil the same role in type 4 fimbrial assembly in this species.

L8 ANSWER 31 OF 67 MEDLINE DUPLICATE 26  
ACCESSION NUMBER: 94066152 MEDLINE  
DOCUMENT NUMBER: 94066152 PubMed ID: 8246267  
TITLE: Role of IgG subclass response to outer-membrane proteins in inhibiting adhesion of *Pseudomonas aeruginosa* to epithelial cells.  
AUTHOR: Morrin M; Reen D J  
CORPORATE SOURCE: Children's Research Centre, Our Lady's Hospital for Sick Children, Crumlin, Dublin.  
SOURCE: JOURNAL OF MEDICAL MICROBIOLOGY, (1993 Dec) 39 (6) 467-72.  
JOURNAL code: J2N; 0224131. ISSN: 0022-2615.  
PUB. COUNTRY: SCOTLAND: United Kingdom  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199401  
ENTRY DATE: Entered STN: 19940201  
Last Updated on STN: 19940201  
Entered Medline: 19940104

AB The IgG subclass response to the major **outer-membrane proteins (OMPs)** of *Pseudomonas aeruginosa* was investigated in 11 cystic fibrosis (CF) patients and 10 healthy controls. Inhibition of adhesion of *P. aeruginosa* to buccal epithelial cells by the IgG serum fractions from the CF patients has been established previously. The CF patients demonstrated marked heterogeneity in their individual IgG subclass response to pseudomonal **OMPs**. The predominant IgG1 and IgG4 responses were directed towards **OMPs** F, H2 and, with IgG1 only, to protein I. Proteins of 42 and 46 kDa primarily elicited an IgG2 response but some patients produced IgG4 antibodies. The IgG3 response varied from very weak in some patients to a strong reaction with proteins D2, E, G and I in others. The range of **antigen-specific** IgG subclass responses was similar in CF patients whose IgG fractions strongly inhibited the adherence of *P. aeruginosa* to epithelial cells and in those whose fractions gave only weak inhibition of adherence. There was no indication that an antibody response towards any particular **OMP** was implicated in the inhibition of bacterial adherence. Thus, the IgG subclass response to **OMPs** did not exert a significant effect on adherence when investigated in isolation, but may possibly play some role in combination with other processes.

L8 ANSWER 32 OF 67 MEDLINE DUPLICATE 27  
ACCESSION NUMBER: 94095123 MEDLINE  
DOCUMENT NUMBER: 94095123 PubMed ID: 7505760  
TITLE: Conservation of surface epitopes in *Pseudomonas aeruginosa* outer membrane porin protein OprF.  
AUTHOR: Martin N L; Rawling E G; Wong R S; Rosok M; Hancock R E  
CORPORATE SOURCE: Department of Microbiology, University of British

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SOURCE: Columbia, Vancouver, Canada.  
FEMS MICROBIOLOGY LETTERS, (1993 Nov 1) 113 (3)  
261-6.  
Journal code: FML; 7705721. ISSN: 0378-1097.  
PUB. COUNTRY: Netherlands  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199401  
ENTRY DATE: Entered STN: 19940215  
Last Updated on STN: 19960129  
Entered Medline: 19940128

AB The **outer membrane proteins** of several prominent bacterial pathogens demonstrate substantial variation in their surface **antigenic** epitopes. To determine if this was also true for *Pseudomonas aeruginosa* **outer membrane protein OprF**, gene sequencing of a serotype 5 isolate was performed to permit comparison with the published serotype 12 **oprF** gene sequence. Only 16 nucleotide substitutions in the 1053 nucleotide coding region were observed; none of these changed the amino acid sequence. A panel of 10 monoclonal antibodies (mAbs) reacted with each of 46 *P. aeruginosa* strains representing all 17 serotype strains, 12 clinical isolates, 15 environmental isolates and 2 laboratory isolates. Between two and eight of these mAbs also reacted with proteins from representatives of the rRNA homology group I of the Pseudomonadaceae. Nine of the ten mAbs recognized surface **antigenic** epitopes as determined by indirect immunofluorescence techniques and their ability to opsonize *P. aeruginosa* for phagocytosis. These epitopes were partially masked by lipopolysaccharide side chains as revealed using a side chain-deficient mutant. It is concluded that **OprF** is a highly conserved protein with several conserved surface **antigenic** epitopes.

L8 ANSWER 33 OF 67 MEDLINE DUPLICATE 28  
ACCESSION NUMBER: 93324236 MEDLINE  
DOCUMENT NUMBER: 93324236 PubMed ID: 8332395  
TITLE: [Serology of anti-*Pseudomonas aeruginosa* and mucoviscidosis: diagnostic aid in the differentiation between colonization and infection].  
Serologie anti-*Pseudomonas aeruginosa* et mucoviscidose: aide au diagnostic des etats de colonisation et d'infection.  
AUTHOR: Recule C; Croize J; Coppere C; Hirtz P; Gout J P; Le Noc P  
CORPORATE SOURCE: Laboratoire de Bacteriologie, CHRU de Grenoble, France.  
SOURCE: PATHOLOGIE BIOLOGIE, (1993 Mar) 41 (3) 249-54.  
Journal code: OSG; 0265365. ISSN: 0369-8114.  
PUB. COUNTRY: France  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: French  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199308  
ENTRY DATE: Entered STN: 19930826  
Last Updated on STN: 19930826  
Entered Medline: 19930816

Searcher : Shears 308-4994

AB Serologic test for *Pseudomonas aeruginosa* have been found useful for differentiating colonization from infection, especially in chronic disease. A Western blot method was compared with the ELISA used routinely. The Western blot detected serum IgGs against *P. aeruginosa* outer membrane proteins, whereas the ELISA reacted with IgGs against soluble *P. aeruginosa* antigens. Among the 103 sera from 58 cystic fibrosis patients studied, all those with ELISA reactivity were positive by Western blot. The antibody response was detected earlier by Western blot than by ELISA, suggesting that the former technique may be useful for the early diagnosis of infection.

L8 ANSWER 34 OF 67 MEDLINE DUPLICATE 29  
 ACCESSION NUMBER: 92363538 MEDLINE  
 DOCUMENT NUMBER: 92363538 PubMed ID: 1379985  
 TITLE: Synthetic peptides representing epitopes of outer membrane protein F of *Pseudomonas aeruginosa* that elicit antibodies reactive with whole cells of heterologous immunotype strains of *P. aeruginosa*.  
 AUTHOR: Hughes E E; Gilleland L B; Gilleland H E Jr  
 CORPORATE SOURCE: Department of Microbiology and Immunology, Louisiana State University Medical Center, School of Medicine, Shreveport 71130.  
 SOURCE: INFECTION AND IMMUNITY, (1992 Sep) 60 (9) 3497-503. Journal code: G07; 0246127. ISSN: 0019-9567.  
 PUB. COUNTRY: United States  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 199209  
 ENTRY DATE: Entered STN: 19920925  
 Last Updated on STN: 19960129  
 Entered Medline: 19920917

AB By using the published amino acid sequence for mature outer membrane protein F of *Pseudomonas aeruginosa*, a computer-assisted analysis was performed to identify sites with potential as surface-exposed, antigenic regions located throughout the length of the protein molecule. Synthetic peptides 13 to 15 amino acid residues in length were synthesized for 10 such regions. Mice were immunized with each of the 10 synthetic peptides conjugated to keyhole limpet hemocyanin. An enzyme-linked immunosorbent assay (ELISA) of the antisera was performed by using each of the synthetic peptides as the ELISA antigen to verify that immunoglobulin G (IgG) antibodies capable of reacting with the peptide used as immunogen were elicited by each peptide. Each of the anti-peptide antisera was screened for the presence of IgG antibodies that could bind to the surface of intact cells of strains representing the seven heterologous Fisher-Devlin immunotypes of *P. aeruginosa* by use of an ELISA with whole cells of the various strains as the ELISA antigen. Three peptides elicited antibodies capable of reacting with whole cells of all seven immunotype strains. Peptide 10, corresponding to amino acid residues 305 to 318, elicited whole-cell-reactive antibodies at high titers. Peptide 9, corresponding to amino acid residues 261 to 274, elicited whole-cell-reactive antibodies at more intermediate titers. Peptide 7, corresponding to amino acid residues 219 to 232, elicited such antibodies only at low titers. The carboxy-terminal portion of the



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mature protein appears to be the immunodominant portion. In particular, peptides 10 (NATAEGRAINRRVE) and 9 (TDAYNQKLSERRAN) appear to have potential for use as immunogens in a synthetic vaccine for immunoprophylaxis against infections caused by *P. aeruginosa*. Antisera from mice immunized with either peptide 9 or 10 mediated opsonophagocytic uptake by human polymorphonuclear leukocytes of wild-type cells of *P. aeruginosa* but exhibited no opsonic activity against a protein F-deficient mutant of *P. aeruginosa*.

L8 ANSWER 35 OF 67 MEDLINE  
ACCESSION NUMBER: 92100557 MEDLINE  
DOCUMENT NUMBER: 92100557 PubMed ID: 1722035  
TITLE: Longitudinal serum IgG response to *Pseudomonas cepacia* surface antigens in cystic fibrosis.  
AUTHOR: Aronoff S C; Quinn F J Jr; Stern R C  
CORPORATE SOURCE: Department of Pediatrics, West Virginia University School of Medicine, Morgantown 26506.  
CONTRACT NUMBER: DK27651 (NIDDK)  
SOURCE: PEDIATRIC PULMONOLOGY, (1991) 11 (4) 289-93.  
Journal code: OWH; 8510590. ISSN: 8755-6863.  
PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199202  
ENTRY DATE: Entered STN: 19920223  
Last Updated on STN: 19960129  
Entered Medline: 19920206

AB In cystic fibrosis (CF), serum antibody against surface **antigens** of *Pseudomonas aeruginosa* is detected only after colonization. Since pulmonary acquisition of *P. cepacia* usually follows colonization with *P. aeruginosa* and since *P. aeruginosa*-colonized patients with CF have demonstrable antibody against **outer membrane proteins** of *P. cepacia*, it appears that acquisition of the latter organism occurs in the presence of specific serum antibody. To test this hypothesis, serum obtained from six *P. aeruginosa*-colonized patients 4 and 2 years prior to and 3 months and 2 years after *P. cepacia* colonization were assayed for total and specific IgG to *P. cepacia* outer membrane components. Four patients demonstrated 6-fold or greater increases in specific IgG titers to whole outer membranes following colonization. By immunoblot, all patients had demonstrable serum IgG against the 27- and 36-kDa **outer membrane proteins** of *P. cepacia* 4 and 2 years prior to colonization. Immunoblots after *P. cepacia* acquisition demonstrated an intensification of the 28- and 36-kDa bands and the appearance of antibody to a very low molecular weight compound which was not hydrolyzed by proteinase K and was present in purified LPS. These observations suggest that low serum titers of antibody against two *P. cepacia* **outer membrane proteins** are present in patients with CF prior to *P. cepacia* colonization, and that these antibodies fail to protect for intrinsic or extrinsic reasons.

L8 ANSWER 36 OF 67 MEDLINE DUPLICATE 30  
ACCESSION NUMBER: 91202091 MEDLINE  
DOCUMENT NUMBER: 91202091 PubMed ID: 1901901

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TITLE: Production and characterization of monoclonal antibodies to outer membrane proteins of *Pseudomonas aeruginosa* grown in iron-depleted media.  
AUTHOR: Smith A W; Wilton J; Clark S A; Alpar O; Melling J; Brown M R  
CORPORATE SOURCE: Microbiology Research Group, Aston University, Birmingham, UK.  
SOURCE: JOURNAL OF GENERAL MICROBIOLOGY, (1991 Feb) 137 ( Pt 2) 227-36.  
Journal code: I87; 0375371. ISSN: 0022-1287.  
PUB. COUNTRY: ENGLAND: United Kingdom  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199105  
ENTRY DATE: Entered STN: 19910607  
Last Updated on STN: 19970203  
Entered Medline: 19910523

AB The iron uptake systems of pathogenic bacteria provide potential targets for immunological intervention. We have partially purified the high molecular mass, iron-regulated **outer membrane proteins** (IROMPs) from *Pseudomonas aeruginosa* and used them to prepare a panel of monoclonal antibodies (mAbs). Five mAbs reacted with an 85 kDa IROMP separated by SDS-PAGE, but gave only low-level binding to whole cells by immunogold electron microscopy. However, iodination of whole cells indicated that the 85 kDa IROMP is surface-exposed. The mAbs were only cross-reactive with clinical isolates representing eight of the 17 International **Antigenic** Typing Scheme serotypes of *P. aeruginosa*, suggesting significant heterogeneity with respect to this IROMP.

L8 ANSWER 37 OF 67 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1991:381455 BIOSIS  
DOCUMENT NUMBER: BR41:53845  
TITLE: ANALYSIS OF IMMUNOGLOBULIN-G SUBCLASS RESPONSES IN CYSTIC FIBROSIS BY IMMUNOBLOT USING WHOLE *PSEUDOMONAS-AERUGINOSA* ANTIGENS AND PURIFIED **OUTER MEMBRANE PROTEINS**.  
AUTHOR(S): LIKAVCANOVA E; LAGACE J  
CORPORATE SOURCE: UNIV. MONTREAL, MONTREAL, CANADA.  
SOURCE: 91ST GENERAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY 1991, DALLAS, TEXAS, USA, MAY 5-9, 1991. ABSTR GEN MEET AM SOC MICROBIOL, (1991) 91 (0), 131. CODEN: AGMME8.  
DOCUMENT TYPE: Conference  
FILE SEGMENT: BR; OLD  
LANGUAGE: English

L8 ANSWER 38 OF 67 MEDLINE DUPLICATE 31  
ACCESSION NUMBER: 92029411 MEDLINE  
DOCUMENT NUMBER: 92029411 PubMed ID: 1930557  
TITLE: Evaluation of protective mAbs against *Pseudomonas aeruginosa* outer membrane protein I by Clq binding assay.  
AUTHOR: Eckhardt A; Heiss M M; Ehret W; Permanetter W; Duchene M; Domdey H; von Specht B U

Searcher : Shears 308-4994

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CORPORATE SOURCE: Institut fur Chirurgische Forschung, Univ. Munchen.  
SOURCE: ZENTRALBLATT FUR BAKTERIOLOGIE, (1991 Apr) 275 (1)  
100-11.

Journal code: BD7; 9203851. ISSN: 0934-8840.

PUB. COUNTRY: GERMANY: Germany, Federal Republic of  
Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199112

ENTRY DATE: Entered STN: 19920124

Last Updated on STN: 19980206

Entered Medline: 19911224

AB Seven monoclonal antibodies (mAbs) against the **outer membrane proteins (OPRs)** F, H and I of *Pseudomonas aeruginosa* were prepared. Western blot analysis has shown the mAbs to cross-react with all 17 serotypes of *P. aeruginosa* according to the International **Antigenic** Typing Scheme. Two of the mAbs (2A1, 6A4) protected mice against fatal *P. aeruginosa* pneumonia. The protective potential of the mAbs did not correlate with the immunoglobulin isotype nor with the fine **antigen** specificity and the in vitro bactericidal activity of the mAbs. Only the binding of the first complement component C1q of the mAbs as estimated in vitro by an ELISA was significantly correlated with their protective potential.

L8 ANSWER 39 OF 67 MEDLINE DUPLICATE 32

ACCESSION NUMBER: 91207197 MEDLINE

DOCUMENT NUMBER: 91207197 PubMed ID: 1902081

TITLE: Dermal and serological response against *Pseudomonas aeruginosa* in sheep bred for resistance and susceptibility to fleece-rot.

AUTHOR: Chin J C; Watts J E

CORPORATE SOURCE: Elizabeth Macarthur Agricultural Institute, Camden, New South Wales.

SOURCE: AUSTRALIAN VETERINARY JOURNAL, (1991 Jan) 68 (1)  
28-31.

Journal code: 9IE; 0370616. ISSN: 0005-0423.

PUB. COUNTRY: Australia

Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199105

ENTRY DATE: Entered STN: 19910607

Last Updated on STN: 19910607

Entered Medline: 19910522

AB Genetically select lines of Merino sheep have been bred at Trangie (NSW Agriculture and Fisheries) for resistance (R) or susceptibility (S) to fleece-rot and flystrike. It is believed that fleece characters are primarily responsible for the R or S phenotype. When transferred to the wetter coastal environment of Sydney, R and S sheep with no more than 6 weeks wool cover, continued to show significant differences in the incidence and severity of fleece-rot dermatitis. To test the hypothesis that these sheep might also exhibit differences in their local skin reactions and immune responsiveness, 3 intradermal injections of killed *Pseudomonas aeruginosa* were administered at monthly intervals. After primary intradermal challenge, R sheep had a higher incidence of

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skin induration and a stronger inflammatory response (increased induration diameter) than S sheep. Compared to S sheep, R sheep also developed higher levels of circulating antibodies against whole cell **antigen** and both inner and **outer membrane proteins** of *P. aeruginosa*. These responses were maintained in R sheep with each consecutive challenge while S sheep showed a decline in their immune responsiveness. Differences in antibody response against **outer membrane proteins** were also detected when **antigenically** naive sheep from each genetic line were sensitised by epicutaneous challenge with *P. aeruginosa* under experimental wetting conditions. Intradermal challenge of these animals 6 months later with **outer membrane proteins**, revealed a late maximum (72 h) in the development of induration diameters for R sheep while S animals showed maximal induration diameters by 24 h. However, there was no significant difference in induration response between 24 h and 72 h within each group of sheep. (ABSTRACT TRUNCATED AT 250 WORDS)

L8 ANSWER 40 OF 67 MEDLINE DUPLICATE 33  
ACCESSION NUMBER: 90307229 MEDLINE  
DOCUMENT NUMBER: 90307229 PubMed ID: 2114360  
TITLE: Protection against experimental *Pseudomonas aeruginosa* infection by recombinant *P. aeruginosa* lipoprotein I expressed in *Escherichia coli*.  
AUTHOR: Finke M; Duchene M; Eckhardt A; Domdey H; von Specht B U  
CORPORATE SOURCE: Chirurgische Universitätsklinik, Chirurgische Forschung, Freiburg, Federal Republic of Germany.  
SOURCE: INFECTION AND IMMUNITY, (1990 Jul) 58 (7) 2241-4. Journal code: G07; 0246127. ISSN: 0019-9567.  
PUB. COUNTRY: United States  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199008  
ENTRY DATE: Entered STN: 19900921  
Last Updated on STN: 19900921  
Entered Medline: 19900813

AB Lipoprotein I (**OprI**) is one of the major proteins of the outer membrane of *Pseudomonas aeruginosa*. **OprI** is a candidate for a vaccine against *P. aeruginosa*, because it cross-reacts **antigenically** in all serotype strains of the International **Antigenic** Typing Scheme. We recently cloned and expressed the gene coding for **OprI** in *Escherichia coli*. This heterologously expressed **OprI** was used successfully to immunize mice against *P. aeruginosa*. In addition, **OprI** from serogroup 12 of *P. aeruginosa* was highly purified by preparative isoelectric focusing and used for immunization of mice. Both vaccines protected the mice against a challenge with a four- to fivefold 50% lethal dose of *P. aeruginosa*.

L8 ANSWER 41 OF 67 MEDLINE DUPLICATE 34  
ACCESSION NUMBER: 90198122 MEDLINE  
DOCUMENT NUMBER: 90198122 PubMed ID: 2107827  
TITLE: Induction of experimental chronic *Pseudomonas aeruginosa* lung infection with *P. aeruginosa*

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AUTHOR: Pedersen S S; Shand G H; Hansen B L; Hansen G N  
CORPORATE SOURCE: Dept. of Clinical Microbiology, Rigshospitalet,  
Statens Seruminstitut, Copenhagen, Denmark.  
SOURCE: APMIS, (1990 Mar) 98 (3) 203-11.  
Journal code: AMS; 8803400. ISSN: 0903-4641.  
PUB. COUNTRY: Denmark  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199005  
ENTRY DATE: Entered STN: 19900601  
Last Updated on STN: 19970203  
Entered Medline: 19900502

AB Alginate-producing, mucoid *P. aeruginosa* is frequently found in the lungs of patients with cystic fibrosis (CF), where it causes a chronic infection. The importance of alginate in the pathogenesis was demonstrated by the ability to establish chronic *P. aeruginosa* lung infection in rats if *P. aeruginosa* entrapped in minute alginate-beads were inoculated transtracheally. Alginate beads containing *P. aeruginosa* were formed by nebulizing a suspension of seaweed sodium-alginate and *P. aeruginosa* into a calcium solution. The alginate bead method of establishing infection was compared to an agar-bead method and proved to be quantitatively similar after 4 weeks. The ability of the two methods to induce formation of precipitins, IgA and IgG antibodies against *P. aeruginosa* antigens, including outer membrane proteins, flagella, exoenzymes and alginate, was assessed by crossed immunoelectrophoresis, enzyme-linked immunosorbent assay and immunoblotting. The two methods of inducing infection were comparable and infected rats had significantly higher antibody response than rats inoculated with sterile beads. We suggest that the alginate bead model closely resembles the later stages of CF-lung infection and that it offers the theoretical advantage of using a substance which is chemically similar to the alginate produced in vivo by *P. aeruginosa*.

L8 ANSWER 42 OF 67 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD  
DUPLICATE 35  
ACCESSION NUMBER: 1989-266867 [37] WPIDS  
DOC. NO. NON-CPI: N1989-203467  
DOC. NO. CPI: C1989-118371  
TITLE: Human monoclonal antibody - binds almost all serotype *Pseudomonas aeruginosa* so is effective in treating infections.  
DERWENT CLASS: B04 D16 S03  
PATENT ASSIGNEE(S): (SUMO) SUMITOMO CHEM IND KK; (SUMU) SUMITOMO SEIYAKU KK  
COUNTRY COUNT: 1  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 01193300	A	19890803	(198937)*		12

APPLICATION DETAILS:

Searcher : Shears 308-4994

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PATENT NO	KIND	APPLICATION	DATE
JP 01193300	A	JP 1988-17958	19880127

PRIORITY APPLN. INFO: JP 1988-17958 19880127

AN 1989-266867 [37] WPIDS

AB JP 01193300 A UPAB: 19930923

Human monoclonal antibody which has specific bond against common **antigen OMP-19** of *Pseudomonas aeruginosa* has following physico-chemical properties: (a) constitutional components; albuminous substance which disappears it's **antigenicity** by proteinase K treatment. (b) m.w.; In heat treatment at 73 deg. C for 10 min., in the presence of 1% Na-dodecyl sulphate and 5% 2-mercaptoethanol, apparent m.w. is 19,000 by 0.2% Na-dodecyl sulphate. 12.5% polyacrylamide gel electrophoresis under reduced condition, also in heat treatment at 100 deg. C for 10 min. under the same conditions, the apparent m.w. is 25,000 by the same condition's electrophoresis. (c) specificity; common **antigen**, which is not depending on sero-type of *Pseudomonas aeruginosa*, and existing in outer membrane fraction of almost all *Pseudomonas aeruginosa*.

USE/ADVANTAGE - The monoclonal antibody bonds almost all sero-type *Pseudomonas aeruginosa* commonly, and effective for the infections. Daily dose for an adult is 0.5-500 mg, pref. 5-50 mg.  
0/0

L8 ANSWER 43 OF 67 TOXCENTER COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:121495 TOXCENTER

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DOCUMENT NUMBER: CA11211096842F

TITLE: Monoclonal antibody to *Pseudomonas aeruginosa* antigen OMP-19

AUTHOR(S): Ouchi, Hiroshi; Otsuka, Hiroshi; Higuchi, Atsuko; Yokota, Shinichi; Noguchi, Hiroshi; Kozuki, Tsuneo; Kato, Masuhiro; Okuda, Takao

CORPORATE SOURCE: ASSIGNEE: Sumitomo Pharmaceuticals Co., Ltd.

PATENT INFORMATION: JP 89193300 A2 3 Aug 1989

SOURCE: (1989) Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF.

COUNTRY: JAPAN

DOCUMENT TYPE: Patent

FILE SEGMENT: CAPLUS

OTHER SOURCE: CAPLUS 1990:96842

LANGUAGE: Japanese

ENTRY DATE: Entered STN: 20011116

Last Updated on STN: 20011116

AN 1990:121495 TOXCENTER

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AB The title monoclonal antibody, useful for clin. therapy and diagnosis, is produced by the conventional hybridoma method. The hybridoma is designated as hybridoma K-1H5. The monoclonal antibody administered i.p. to *P. aeruginosa*-infected mice markedly controlled the infection.

L8 ANSWER 44 OF 67 MEDLINE

ACCESSION NUMBER: 89327122 MEDLINE

DUPLICATE 36

Searcher : Shears 308-4994

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DOCUMENT NUMBER: 89327122 PubMed ID: 2502533  
TITLE: Pseudomonas aeruginosa outer membrane lipoprotein I  
gene: molecular cloning, sequence, and expression in  
Escherichia coli.  
AUTHOR: Duchene M; Barron C; Schweizer A; von Specht B U;  
Domdey H  
CORPORATE SOURCE: Laboratorium fur Molekulare Biologie,  
Ludwig-Maximilians-Universitat Munchen, Federal  
Republic of Germany.  
SOURCE: JOURNAL OF BACTERIOLOGY, (1989 Aug) 171 (8) 4130-7.  
Journal code: HH3; 2985120R. ISSN: 0021-9193.  
PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
OTHER SOURCE: GENBANK-M25761  
ENTRY MONTH: 198908  
ENTRY DATE: Entered STN: 19900309  
Last Updated on STN: 19900309  
Entered Medline: 19890830

AB Lipoprotein I (**OprI**) is one of the major proteins of the  
outer membrane of *Pseudomonas aeruginosa*. Like porin  
protein F (**OprF**), it is a vaccine candidate because it  
**antigenically** cross-reacts with all serotype strains of the  
International **Antigenic** Typing Scheme. Since lipoprotein I  
was expressed in *Escherichia coli* under the control of its own  
promoter, we were able to isolate the gene by screening a lambda  
EMBL3 phage library with a mouse monoclonal antibody directed  
against lipoprotein I. The monocistronic **OprI** mRNA encodes  
a precursor protein of 83 amino acid residues including a signal  
peptide of 19 residues. The mature protein has a molecular weight of  
6,950, not including bound glycerol and lipid. Although the amino  
acid sequences of protein I of *P. aeruginosa* and Braun's  
lipoprotein of *E. coli* differ considerably (only 30.1% identical  
amino acid residues), peptidoglycan in *E. coli*, are identical. Using  
lipoprotein I expressed in *E. coli*, it can now be tested whether  
this protein alone, without *P. aeruginosa*  
lipopolysaccharide contaminations, has a protective effect against  
*P. aeruginosa* infections.

L8 ANSWER 45 OF 67 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.

ACCESSION NUMBER: 89046353 EMBASE  
DOCUMENT NUMBER: 1989046353  
TITLE: Surface characteristics of *Pseudomonas aeruginosa*  
grown in a chamber implant model in mice and rats.  
AUTHOR: Kelly N.M.; Bell A.; Hancock R.E.W.  
CORPORATE SOURCE: Department of Microbiology, University of British  
Columbia, Vancouver, BC V6T 1W5, Canada  
SOURCE: Infection and Immunity, (1989) 57/2 (345-350).  
ISSN: 0019-9567 CODEN: INFIBR  
COUNTRY: United States  
DOCUMENT TYPE: Journal  
FILE SEGMENT: 004 Microbiology  
LANGUAGE: English  
SUMMARY LANGUAGE: English

AB *Pseudomonas aeruginosa* PAO1 was grown in vivo in chambers  
implanted into the peritoneums of mice and rats. Sodium dodecyl  
sulfate-polyacrylamide gel electrophoresis of extracts of bacterial

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cells taken from the chambers and washed to remove loosely bound host proteins revealed the presence of the major **outer membrane proteins** D2, E, F, G, and H2. Western immunoblotting with specific antisera confirmed the presence of porin protein F and lipoprotein H2. However, there was no apparent induction of the phosphate starvation-inducible porin P or the divalent cation starvation-inducible protein H1. Small amounts of proteins with molecular weights similar to those of the iron-regulated **outer membrane proteins** were found in cells grown in vivo; however, their presence could not be confirmed immunologically. The presence of pili and flagella on the cells grown in vivo was demonstrated by electron microscopy and Western immunoblotting. A consistent alteration in the lipopolysaccharide banding pattern was observed after growth in vivo. Compared with cells of strain PAO1 grown in vitro, cells grown in vivo appeared to lack a series of high-molecular-weight O-**antigen**-containing lipopolysaccharide bands and gained a new series of lower-molecular-weight lipopolysaccharide bands. This alteration in the lipopolysaccharide after growth in vivo did not affect the O-**antigen** serotype or the resistance of the bacteria to serum.

L8 ANSWER 46 OF 67 MEDLINE DUPLICATE 37  
ACCESSION NUMBER: 89108571 MEDLINE  
DOCUMENT NUMBER: 89108571 PubMed ID: 2492257  
TITLE: Surface characteristics of Pseudomonas aeruginosa grown in a chamber implant model in mice and rats.  
AUTHOR: Kelly N M; Bell A; Hancock R E  
CORPORATE SOURCE: Department of Microbiology, University of British Columbia, Vancouver, Canada.  
SOURCE: INFECTION AND IMMUNITY, (1989 Feb) 57 (2) 344-50. Journal code: G07; 0246127. ISSN: 0019-9567.  
PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198903  
ENTRY DATE: Entered STN: 19900308  
Last Updated on STN: 19900308  
Entered Medline: 19890301

AB Pseudomonas **aeruginosa** PAO1 was grown in vivo in chambers implanted into the peritoneums of mice and rats. Sodium dodecyl sulfate-polyacrylamide gel electrophoresis of extracts of bacterial cells taken from the chambers and washed to remove loosely bound host proteins revealed the presence of the major **outer membrane proteins** D2, E, F, G, and H2. Western immunoblotting with specific antisera confirmed the presence of porin protein F and lipoprotein H2. However, there was no apparent induction of the phosphate starvation-inducible porin P or the divalent cation starvation-inducible protein H1. Small amounts of proteins with molecular weights similar to those of the iron-regulated **outer membrane proteins** were found in cells grown in vivo; however, their presence could not be confirmed immunologically. The presence of pili and flagella on the cells grown in vivo was demonstrated by electron microscopy and Western immunoblotting. A consistent alteration in the lipopolysaccharide banding pattern was observed after growth in vivo. Compared with cells of strain PAO1 grown in vitro, cells grown



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in vivo appeared to lack a series of high-molecular-weight O-**antigen**-containing lipopolysaccharide bands and gained a new series of lower-molecular-weight lipopolysaccharide bands. This alteration in the lipopolysaccharide after growth in vivo did not affect the O-**antigen** serotype or the resistance of the bacteria to serum.

L8 ANSWER 47 OF 67 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
ACCESSION NUMBER: 1989:375016 BIOSIS  
DOCUMENT NUMBER: BR37:54139  
TITLE: **ANTIGENIC CHARACTERIZATION OF CIRCULATING IMMUNE COMPLEXES FROM CYSTIC FIBROSIS PATIENTS WITH MONOCLONAL ANTIBODIES AGAINST PSEUDOMONAS-AERUGINOSA OUTER MEMBRANE PROTEINS.**  
AUTHOR(S): FOURNIER D; LAGACE J  
CORPORATE SOURCE: UNIV. MONTREAL, MONTREAL, CAN.  
SOURCE: 89TH ANNUAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, NEW ORLEANS, LOUISIANA, USA, MAY 14-18, 1989. ABSTR ANNU MEET AM SOC MICROBIOL, (1989) 89 (0), 146.  
CODEN: ASMACK. ISSN: 0094-8519.  
DOCUMENT TYPE: Conference  
FILE SEGMENT: BR; OLD  
LANGUAGE: English

L8 ANSWER 48 OF 67 MEDLINE DUPLICATE 38  
ACCESSION NUMBER: 88198029 MEDLINE  
DOCUMENT NUMBER: 88198029 PubMed ID: 2834340  
TITLE: Cloning of the Pseudomonas aeruginosa outer membrane porin protein P gene: evidence for a linked region of DNA homology.  
AUTHOR: Siehnel R J; Worobec E A; Hancock R E  
CORPORATE SOURCE: Department of Microbiology, University of British Columbia, Vancouver, Canada.  
SOURCE: JOURNAL OF BACTERIOLOGY, (1988 May) 170 (5) 2312-8.  
Journal code: HH3; 2985120R. ISSN: 0021-9193.  
PUB. COUNTRY: United States  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198806  
ENTRY DATE: Entered STN: 19900308  
Last Updated on STN: 19990129  
Entered Medline: 19880609

AB The gene encoding the outer membrane phosphate-selective porin protein P from Pseudomonas **aeruginosa** was cloned into Escherichia coli. The protein product was expressed and transported to the outer membrane of an E. coli phoE mutant and assembled into functional trimers. Expression of a product of the correct molecular weight was confirmed by sodium dodecyl sulfate-polyacrylamide gel electrophoresis and Western blot (immunoblot) analysis, using polyclonal antibodies to protein P monomer and trimer forms. Protein P trimers were partially purified from the E. coli clone and shown to form channels with the same conductance as those formed by protein P from P. **aeruginosa**. The location and orientation of the protein P-encoding (*oprP*) gene on the cloned DNA was identified by three methods: (i) mapping the insertion point of

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transposon Tn501 in a previously isolated *P. aeruginosa* protein P-deficient mutant; (ii) hybridization of restriction fragments from the cloned DNA to an oligonucleotide pool synthesized on the basis of the amino-terminal protein sequence of protein P; and (iii) fusion of a PstI fragment of the cloned DNA to the amino terminus of the beta-galactosidase gene of pUC8, producing a fusion protein that contained protein P-**antigenic** epitopes. Structural analysis of the cloned DNA and *P. aeruginosa* chromosomal DNA revealed the presence of two adjacent PstI fragments which cross-hybridized, suggesting a possible gene duplication. The P-related (PR) region hybridized to the oligonucleotide pool described above. When the PstI fragment which contained the PR region was fused to the beta-galactosidase gene of pUC8, a fusion protein was produced which reacted with a protein P-specific antiserum. (ABSTRACT TRUNCATED AT 250 WORDS)

L8 ANSWER 49 OF 67 MEDLINE DUPLICATE 39  
ACCESSION NUMBER: 89232725 MEDLINE  
DOCUMENT NUMBER: 89232725 PubMed ID: 3149944  
TITLE: Cloning and characterization of cDNAs coding for the heavy and light chains of a monoclonal antibody specific for *Pseudomonas aeruginosa* outer membrane protein I.  
AUTHOR: Marget M; Eckhardt A; Ehret W; von Specht B U; Duchene M; Domdey H  
CORPORATE SOURCE: Laboratorium fur molekulare Biologie, Ludwig Maximilians Universitat, Munchen, Martinsried, F.R.G.  
SOURCE: GENE, (1988 Dec 30) 74 (2) 335-45.  
PUB. COUNTRY: Journal code: FOP; 7706761. ISSN: 0378-1119. Netherlands  
LANGUAGE: Journal; Article; (JOURNAL ARTICLE)  
FILE SEGMENT: English  
ENTRY MONTH: Priority Journals  
ENTRY DATE: 198906  
Entered STN: 19900306  
Last Updated on STN: 19900306  
Entered Medline: 19890619

AB A set of seven monoclonal antibodies (MAb) directed against **outer membrane proteins** of *Pseudomonas aeruginosa* has been examined by Western blot analysis, indirect immunofluorescence tests and subclass typing. The hybridoma cell line secreting MAb 6A4, which reacts with **outer membrane protein I**, belongs to the IgG2a subclass and crossreacts with the 17 *P. aeruginosa* serotypes as listed in the International **Antigenic** Typing System, was selected as source for the preparation of poly(A)+RNA which in turn was used as template for cDNA synthesis and cloning. Full length cDNA clones of the gamma heavy chain as well as the kappa light chain were obtained and characterized by nucleotide sequence analysis. The complete cDNA sequences coding for the heavy and light chains will be the prerequisite for the construction and heterologous expression of a chimeric human-mouse monoclonal antibody which might be used in therapy of *P. aeruginosa* infections.

L8 ANSWER 50 OF 67 MEDLINE DUPLICATE 40  
ACCESSION NUMBER: 89068662 MEDLINE  
DOCUMENT NUMBER: 89068662 PubMed ID: 3143837

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TITLE: Antibody response to *Pseudomonas aeruginosa* surface protein antigens in a rat model of chronic lung infection.  
AUTHOR: Cochrane D M; Brown M R; Anwar H; Weller P H; Lam K; Costerton J W  
CORPORATE SOURCE: Pharmaceutical Sciences Institute, Aston University, Birmingham.  
SOURCE: JOURNAL OF MEDICAL MICROBIOLOGY, (1988 Dec) 27 (4) 255-61.  
Journal code: J2N; 0224131. ISSN: 0022-2615.  
PUB. COUNTRY: ENGLAND: United Kingdom  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198901  
ENTRY DATE: Entered STN: 19900308  
Last Updated on STN: 19900308  
Entered Medline: 19890126

AB For an animal model of infection to be useful in immunological studies it is necessary to establish that the surface **antigens** expressed by bacteria growing in vivo in the experimental infection mimic those expressed by bacteria in the human infection. In this study, chronic infection was induced by inoculating the lungs of rats with agar beads containing mucoid *Pseudomonas aeruginosa*. *P. aeruginosa* was obtained from the lungs 14 days after infection and studied without subculture. Several high-mol.-wt proteins were expressed in the outer membranes (OM) of the bacteria from the rat lungs which could be induced by cultivating the same isolate in iron-depleted conditions in vitro. The pattern of iron-regulated membrane proteins (IRMP) was similar to that obtained in an earlier study with another mucoid isolate of *P. aeruginosa* examined directly, without subculture, from the sputum of a cystic fibrosis patient. Immunoblotting with LPS-absorbed serum from infected rats and also with serum from CF patients showed that IgG in these fluids reacted with the IRMPs and other major OM proteins (**OMPs**) of *P. aeruginosa*. Antisera from rats immunised with whole cells of *P. aeruginosa* grown in iron-depleted media reacted with all the major **OMPs** of *P. aeruginosa*, including the IRMPs, confirming their immunogenicity.

L8 ANSWER 51 OF 67 MEDLINE DUPLICATE 41  
ACCESSION NUMBER: 89055763 MEDLINE  
DOCUMENT NUMBER: 89055763 PubMed ID: 3143013  
TITLE: Antibody response to outer-membrane antigens of *Pseudomonas aeruginosa* in human burn wound infection.  
AUTHOR: Ward K H; Anwar H; Brown R W; Wale J; Gowar J  
CORPORATE SOURCE: Department of Pharmaceutical Sciences, Aston University, Birmingham.  
SOURCE: JOURNAL OF MEDICAL MICROBIOLOGY, (1988 Nov) 27 (3) 179-90.  
Journal code: J2N; 0224131. ISSN: 0022-2615.  
PUB. COUNTRY: ENGLAND: United Kingdom  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198901  
ENTRY DATE: Entered STN: 19900308

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Last Updated on STN: 19900308

Entered Medline: 19890103

AB There is little information about the local and systemic antibody response to surface **antigens** of bacteria growing in situ in infected lesions in man. In this study, *Pseudomonas aeruginosa* was obtained directly from the infected wounds of two patients with burns and studied without subculture. **Outer-membrane proteins (OMPs)** were investigated and compared with those of cells cultivated in the laboratory, with the aim of selecting defined growth conditions to give surface **antigens** more closely resembling those found in vivo. Several high-mol. wt (77,000-101,000) proteins were expressed in the outer membranes of the bacteria from the patients and could be phenotypically induced by cultivating the same isolate in iron-depleted conditions in vitro. Other major **OMPs** (D, E, F, G and H) were also observed in cells taken from the lesions. Immunoblotting demonstrated that proteins D and E were recognised by different classes of immunoglobulins in the sera of both patients as was flagellar **antigen** present in the outer-membrane preparation of the *P. aeruginosa* from patient 1. Iron-regulated membrane proteins (IRMPs) were similarly detected, but more strongly by IgM from patient 1. Furthermore, a marked antibody response to IRMPs was noted at the site of infection. Bands of a similar intensity were seen after absorption of the sera with lipopolysaccharide (LPS) purified from the infecting strain. This indicated that the response observed was directed against **OMPs** (including IRMPs) and not against contaminating LPS.

L8 ANSWER 52 OF 67 MEDLINE DUPLICATE 42  
ACCESSION NUMBER: 88214086 MEDLINE  
DOCUMENT NUMBER: 88214086 PubMed ID: 2896754  
TITLE: Impact of molecular biology on *Pseudomonas aeruginosa* immunization.  
AUTHOR: Pennington J E  
CORPORATE SOURCE: Department of Medicine, University of California San Francisco 94143.  
SOURCE: JOURNAL OF HOSPITAL INFECTION, (1988 Feb) 11 Suppl A 96-102.  
PUB. COUNTRY: ENGLAND: United Kingdom  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198806  
ENTRY DATE: Entered STN: 19900308  
Last Updated on STN: 19950206  
Entered Medline: 19880616

AB Persisting high mortalities from *Pseudomonas aeruginosa* infection have led to new strategies for treatment. In vitro and animal studies indicate that antibodies against *P. aeruginosa* **antigens** increase host defense against this infectious agent. The most effective immunogen is lipopolysaccharide (LPS) **antigen**; however, LPS vaccines are poorly tolerated. Furthermore, the LPS molecule does not lend itself well to production by genetic engineering. *Pseudomonas aeruginosa* protein **antigens** which might be amenable to recombinant DNA production are **outer membrane proteins** and exotoxin A, modified to

decrease toxicity but maintain immunogenicity. Another strategy for immunization with anti-LPS *P. aeruginosa* antibodies is passive administration of either hyperimmune immunoglobulins (polyclonal) or monoclonal antibodies. Passive immunization offers the dual advantage of rapid protection or treatment and is well tolerated. Several monoclonal antibodies against LPS *P. aeruginosa* antigens have been described, including both murine and human types. Studies in animal models of infection indicate that *P. aeruginosa* monoclonal antibodies do protect, thus, the most feasible application of molecular biology to the problem of *P. aeruginosa* infection appears to be production of immunotype-specific monoclonal antibodies for immune therapy.

L8 ANSWER 53 OF 67 MEDLINE DUPLICATE 43  
 ACCESSION NUMBER: 87193088 MEDLINE  
 DOCUMENT NUMBER: 87193088 PubMed ID: 2437030  
 TITLE: Production and characterization of monoclonal antibodies against serotype strains of *Pseudomonas aeruginosa*.  
 COMMENT: Erratum in: Infect Immun 1987 Dec;55(12):3240  
 AUTHOR: Lam J S; MacDonald L A; Lam M Y; Duchesne L G; Southam G G  
 SOURCE: INFECTION AND IMMUNITY, (1987 May) 55 (5) 1051-7. Journal code: GO7; 0246127. ISSN: 0019-9567.  
 PUB. COUNTRY: United States  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 198706  
 ENTRY DATE: Entered STN: 19900303  
 Last Updated on STN: 19900303  
 Entered Medline: 19870605

AB Monoclonal antibodies against 12 of the 17 IATS serotype strains of *Pseudomonas aeruginosa* were produced. Eighty-seven hybridoma clones were isolated, and the antibodies secreted were found to be reactive with both Formalin-fixed whole cells and purified lipopolysaccharide of homologous strains in enzyme-linked immunosorbent assays. Among these monoclonal antibodies, the predominant antibody class was immunoglobulin M (IgM) (76%), although antibodies of the IgG2a and IgG3 isotypes were also produced. The monoclonal antibodies could further be divided into two groups based on their ability to agglutinate whole cells of homologous strains. The agglutinating monoclonal antibodies were found to immunoblot with the O side chains of homologous lipopolysaccharide, while the nonagglutinating monoclonal antibodies were found to be reactive with **outer membrane protein-associated lipopolysaccharide**. The applicability of monoclonal antibodies for serotyping was examined, and several antibodies were found to agglutinate whole cells and immunoblot with the O **antigen** of corresponding serotypes of clinical isolates from cystic fibrosis patients. In conclusion, a set of monoclonal antibodies against the IATS serotype strains of *P. aeruginosa* have been produced. These antibodies represent a bank of invaluable immunological reagents which may have application in serotyping, epitope mapping, lipopolysaccharide structural determination, and studies of protection against *P. aeruginosa*.

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L8 ANSWER 54 OF 67 MEDLINE DUPLICATE 44  
ACCESSION NUMBER: 88123912 MEDLINE  
DOCUMENT NUMBER: 88123912 PubMed ID: 3431961  
TITLE: An immunohistological evaluation of *Pseudomonas aeruginosa* pulmonary infection in two patients with cystic fibrosis.  
AUTHOR: Speert D P; Dimmick J E; Pier G B; Saunders J M; Hancock R E; Kelly N  
CORPORATE SOURCE: Department of Pediatrics, University of British Columbia, Vancouver, Canada.  
SOURCE: PEDIATRIC RESEARCH, (1987 Dec) 22 (6) 743-7. Journal code: OWL; 0100714. ISSN: 0031-3998.  
PUB. COUNTRY: United States  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198802  
ENTRY DATE: Entered STN: 19900308  
Last Updated on STN: 19900308  
Entered Medline: 19880226

AB *Pseudomonas aeruginosa* is the principal pulmonary pathogen in patients with cystic fibrosis. All attempts to date to prevent or eradicate *P. aeruginosa* infections in these patients have been unsuccessful. Vaccination against *P. aeruginosa* has been proposed as a preventive strategy but it has not been adequately evaluated. The purpose of this study was to determine whether *P. aeruginosa*, present in the lungs of patients with cystic fibrosis, express surface **antigens** similar to those grown in vitro; this issue is of critical importance when choosing bacterial products as vaccine candidates. Lung sections from two patients who died of the pulmonary complications of cystic fibrosis were studied. Bacteria, both in lung sections and isolated from the lung sections and grown in vitro, reacted strongly with polyclonal and monoclonal antibodies against *P. aeruginosa* mucoid exopolysaccharide and **outer membrane proteins** F and H2; this suggested that these **antigens** are surface exposed in vivo. It was also found that bacteria in both lung sections were associated in situ with IgG, IgA, and C3 but not with IgM or C4.

L8 ANSWER 55 OF 67 TOXLIT  
ACCESSION NUMBER: 1988:19030 TOXLIT  
DOCUMENT NUMBER: CA-108-032769X  
TITLE: Identification and gene structure of an azurin-like protein with a lipoprotein signal peptide in *Neisseria gonorrhoeae*.  
AUTHOR: Gotschlich EC; Seiff ME  
CORPORATE SOURCE: Lab. Bacteriol. Immunol., Rockefeller Univ., New York  
SOURCE: FEMS Microbiol. Lett, (1987). Vol. 43, No. 3, pp. 253-5.  
CODEN: FMLED7. ISSN. 0378-1097.  
PUB. COUNTRY: United States  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
FILE SEGMENT: CA  
LANGUAGE: English  
OTHER SOURCE: CA 108:32769  
ENTRY MONTH: 198803

Searcher : Shears 308-4994

AB The DNA sequence of a cloned gonococcal gene for the H.8 **antigen** was detd. The predicted protein sequence is highly homologous to the class of blue copper-contg. proteins known as azurins. However, the 127 amino acid sequence homologous to azurin is preceded by 2 unusual structural features. The gene possesses a typical 17 residue lipoprotein signal peptide and the N-terminal 39 amino acids are very rich in proline and alanine. The azurin gene of *Pseudomonas aeruginosa* has recently been characterized and possesses an ordinary signal peptide susceptible to signal peptidase I, causing export of a sol. protein to the periplasm. In gonococcus it would appear that the homologous product becomes an **outer membrane protein**.

L8 ANSWER 56 OF 67 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1987:220746 BIOSIS

DOCUMENT NUMBER: BR32:106620

TITLE: SURFACE **ANTIGENS** OF IN-VIVO GROWN  
PSEUDOMONAS-AERUGINOSA LUNG FLUID AND SERUM  
ANTIBODY RESPONSE TO **OUTER MEMBRANE**  
**PROTEINS** AND LIPOPOLYSACCHARIDE IN A RAT  
MODEL OF CHRONIC LUNG INFECTION.

AUTHOR(S): COCHRANE D M G; ANWAR H; BROWN M R W; LAM K; COSTERON  
J W

CORPORATE SOURCE: ASTON UNIV., BIRMINGHAM, U.K.

SOURCE: 87TH ANNUAL MEETING OF THE AMERICAN SOCIETY FOR  
MICROBIOLOGY, ATLANTA, GEORGIA, USA, MARCH 1-6, 1987.  
ABSTR ANNU MEET AM SOC MICROBIOL, (1987) 87 (0), 88.  
CODEN: ASMACK. ISSN: 0094-8519.

DOCUMENT TYPE: Conference

FILE SEGMENT: BR; OLD

LANGUAGE: English

L8 ANSWER 57 OF 67 MEDLINE

DUPLICATE 45

ACCESSION NUMBER: 86139917 MEDLINE

DOCUMENT NUMBER: 86139917 PubMed ID: 2419313

TITLE: Phosphate-starvation-induced outer membrane proteins  
of members of the families Enterobacteriaceae and  
Pseudomonadaceae: demonstration of immunological  
cross-reactivity with an antiserum specific for porin  
protein P of *Pseudomonas aeruginosa*.

AUTHOR: Poole K; Hancock R E

SOURCE: JOURNAL OF BACTERIOLOGY, (1986 Mar) 165 (3) 987-93.  
Journal code: HH3; 2985120R. ISSN: 0021-9193.

PUB. COUNTRY: United States

Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 198604

ENTRY DATE: Entered STN: 19900321

Last Updated on STN: 19900321

Entered Medline: 19860409

AB Bacteria from members of the families Enterobacteriaceae and  
Pseudomonadaceae were grown under phosphate-deficient (0.1 to 0.2 mM  
Pi) conditions and examined for the production of novel membrane  
proteins. Of the 17 strains examined, 12 expressed a  
phosphate-starvation-induced **outer membrane**  
**protein** which was heat modifiable in that after  
solubilization in sodium dodecyl sulfate at low temperature the

protein ran on gels as a diffuse band of higher apparent molecular weight, presumably an oligomer form, which shifted to an apparent monomer form after solubilization at high temperature. These proteins fell into two classes based on their monomer molecular weights and the detergent conditions required to release the proteins from the peptidoglycan. The first class, expressed by species of the *Pseudomonas fluorescens* branch of the family Pseudomonadaceae, was similar to the phosphate-starvation-inducible, channel-forming protein P of *Pseudomonas aeruginosa*. The second class resembled the major enterobacterial porin proteins and the phosphate-regulated PhoE protein of *Escherichia coli*. Using a protein P-trimer-specific polyclonal antiserum, we were able to demonstrate cross-reactivity of the oligomeric forms of both classes of these proteins on Western blots. However, this antiserum did not react with the monomeric forms of any of these proteins, including protein P monomers. With a protein P-monomer-specific antiserum, no reactivity was seen with any of the phosphate-starvation-inducible membrane proteins (in either oligomeric or monomeric form), with the exception of protein P monomers. These results suggest the presence of conserved **antigenic** determinants only in the native, functional proteins.

L8 ANSWER 58 OF 67 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 ACCESSION NUMBER: 1987:27678 BIOSIS  
 DOCUMENT NUMBER: BA83:17612  
 TITLE: THE CHARACTERIZATION OF CROSS-REACTING PROTEIN  
 ANTIGEN IN GRAM-NEGATIVE BACILLI.  
 AUTHOR(S): YAMAGUCHI H; TAGUCHI H; ISHIYAMA N; KANAMORI M; OGATA  
 S  
 CORPORATE SOURCE: DEPARTMENT OF MICROBIOLOGY, KYORIN UNIVERSITY SCHOOL  
 OF MEDICINE, MITAKA, TOKYO, 181, JAPAN.  
 SOURCE: JPN J BACTERIOL, (1986) 41 (4), 701-708.  
 CODEN: NSKZAM. ISSN: 0021-4930.  
 FILE SEGMENT: BA; OLD  
 LANGUAGE: Japanese

AB Distribution of cross-reacting protein **antigen** (CRPA) among 11 bacterial species was examined by immunoelectrophoresis. CRPA was detected in the sonicates of *Shigella sonnei*, *Proteus mirabilis*, *Salmonella enteritidis*, *Klebsiella pneumoniae*, *Serratia marcescens*, *Escherichia coli*, *Yersinia enterocolitica*, *Pseudomonas aeruginosa* and *Vibrio cholerae* but not in those of *Neisseria gonorrhoeae* or *Staphylococcus aureus*. A major protein with a molecular weight of 60 kilodaltons was found to be shared by the above nine species by SDS-PAGE and immunoblotting. CRPAs of *V. cholerae* and *Y. enterocolitica* were partially purified by a combination of starch gel electrophoresis and gel filtration. The molecular weights of both CRPAs were estimated at about 500 kilodaltons by gel filtration. The 60 kilodalton protein was found also in both CRPAs by SDS-PAGE and immunoblotting, therefore, it is a major **antigenic** component of CRPAs of the above nine gram-negative rods. On the other hand, the major protein was not found in the outer membrane preparation obtained from *V. cholerae*. The present study suggests that CRPA is distinct from such previously reported common **antigens** as the **outer membrane protein** of *V. cholerae* and Kunin's **antigen** of enteric bacteria in the immunological and physico-chemical properties.



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L8 ANSWER 59 OF 67 MEDLINE DUPLICATE 46  
ACCESSION NUMBER: 87007104 MEDLINE  
DOCUMENT NUMBER: 87007104 PubMed ID: 3093385  
TITLE: Polyclonal and monoclonal antibody therapy for  
experimental *Pseudomonas aeruginosa* pneumonia.  
AUTHOR: Pennington J E; Small G J; Lostrom M E; Pier G B  
CONTRACT NUMBER: AI 22534 (NIAID)  
AI 22535 (NIAID)  
SOURCE: INFECTION AND IMMUNITY, (1986 Oct) 54 (1) 239-44.  
Journal code: GO7; 0246127. ISSN: 0019-9567.  
PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198611  
ENTRY DATE: Entered STN: 19900302  
Last Updated on STN: 19970203  
Entered Medline: 19861107

AB A human immunoglobulin G preparation, enriched in antibodies to lipopolysaccharide (LPS) *Pseudomonas aeruginosa* antigens (PA-IGIV) and murine monoclonal antibodies (MAb) to *P. aeruginosa* Fisher immunotype-1 (IT-1) LPS antigen and outer membrane protein F (porin), were evaluated for therapeutic efficacy in a guinea pig model of *P. aeruginosa* pneumonia. The concentration of antibodies to IT-1 LPS was 7.6 micrograms/ml in PA-IGIV and 478 micrograms/ml in the IT-1 MAb preparation. No antibody to IT-1 was detected in MAb to porin. For study, animals were infected by intratracheal instillation of IT-1 *P. aeruginosa* and then treated 2 h later with intravenous infusions of PA-IGIV, IT-1 MAb, or porin MAb. Control groups received intravenous albumin, and routinely died from pneumonia. Both PA-IGIV (500 mg/kg) and IT-1 MAb (greater than or equal to 2.5 mg/kg) treatment resulted in increased survival (*P* less than 0.01 to 0.001), and also improved intrapulmonary killing of bacteria. Porin MAb failed to protect from fatal pneumonia. IT-1 MAb treatment produced more survivals than did PA-IGIV treatment but only at dosages of MAb resulting in serum antibody concentrations greater than those achieved with PA-IGIV. PA-IGIV and IT-1 MAb demonstrated in vitro and in vivo (posttreatment guinea pig serum) opsonophagocytic activity for the IT-1 challenge strain. However, the polyclonal preparation required complement, whereas the MAb did not. We conclude that passive immunization with polyclonal hyperimmune *P. aeruginosa* globulin or with MAb to LPS antigens may be useful in the treatment of acute *P. aeruginosa* pneumonia. The relative efficacies of such preparations may be limited, however, by their type-specific LPS antibody concentrations.

L8 ANSWER 60 OF 67 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
ACCESSION NUMBER: 1986:233869 BIOSIS  
DOCUMENT NUMBER: BR30:116365  
TITLE: SERUM AND LOCAL IMMUNE RESPONSE TO OUTER  
MEMBRANE PROTEIN ANTIGENS  
OF *PSEUDOMONAS-AERUGINOSA* ISOLATED WITHOUT  
SUBCULTURE FROM HUMAN BURN WOUNDS.  
AUTHOR(S): WARD K H; ANWAR H; BROWN M R W; WALE R J; GOWAR J  
CORPORATE SOURCE: MICROBIOL. RES. GROUP, DEP. PHARM. SCI., ASTON UNIV.,

09/359426

SOURCE: ASTON TRIANGLE, BIRMINGHAM B4 7ET, UK.  
86TH ANNUAL MEETING OF THE AMERICAN SOCIETY FOR  
MICROBIOLOGY, WASHINGTON, D.C., USA, MAR. 23-28,  
1986. ABSTR ANNU MEET AM SOC MICROBIOL, (1986) 86  
(0), 90.  
CODEN: ASMACK. ISSN: 0094-8519.

DOCUMENT TYPE: Conference  
FILE SEGMENT: BR; OLD  
LANGUAGE: English

L8 ANSWER 61 OF 67 MEDLINE  
ACCESSION NUMBER: 86073677 MEDLINE  
DOCUMENT NUMBER: 86073677 PubMed ID: 2416201  
TITLE: Monoclonal antibodies against bacterial outer  
membrane antigens.  
AUTHOR: Hancock R E; Mutharia L M  
SOURCE: ADVANCES IN EXPERIMENTAL MEDICINE AND BIOLOGY, (1985)  
185 215-22.  
Journal code: 2LU; 0121103. ISSN: 0065-2598.

PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198601  
ENTRY DATE: Entered STN: 19900321  
Last Updated on STN: 19900321  
Entered Medline: 19860109

AB Monoclonal antibodies have proved to be highly specific tools for  
defining the **antigenic** epitopes of *Pseudomonas*  
**aeruginosa** outer membrane macromolecules. In this article we  
have highlighted the use of monoclonal antibodies in the study of  
lipopolysaccharide heterogeneity and in particular have demonstrated  
that single monoclonal antibodies can recognize epitopes on lipid A  
which are conserved in all Gram negative bacteria tested. Monoclonal  
antibodies against *P. aeruginosa* **outer**  
**membrane proteins** have been used to demonstrate  
the strong conservation of specific **antigenic** sites in all  
*P. aeruginosa* strains tested. In the case of one  
monoclonal antibody, specific for outer membrane lipoprotein H2, the  
**antigenic** site recognized by the antibody was also found to  
be conserved in all group 1 *Pseudomonads*. The implications of these  
monoclonal antibodies to bacterial taxonomy is discussed. Monoclonal  
antibodies against two separate conserved surface epitopes on  
**outer membrane protein F** were isolated  
and differentiated according to their reactions with 2  
mercaptoethanol-reduced protein F and with proteolytic and cyanogen  
bromide peptide fragments of protein F. One of these protein  
F-specific monoclonal antibodies has been demonstrated to have  
immunotherapeutic potential.

L8 ANSWER 62 OF 67 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.  
ACCESSION NUMBER: 84235881 EMBASE  
DOCUMENT NUMBER: 1984235881  
TITLE: Outer membrane antigens of mucoid *Pseudomonas*  
*aeruginosa* isolated directly from the sputum of a  
cystic fibrosis patient.  
AUTHOR: Anwar H.; Brown M.R.W.; Day A.; Weller P.H.  
CORPORATE SOURCE: Microbiology Research Group, Department of Pharmacy,

09/359426

SOURCE: University of Aston in Birmingham, Birmingham B16  
8ET, United Kingdom  
FEMS Microbiology Letters, (1984) 24/2-3 (235-239).  
CODEN: FMLED7  
COUNTRY: Netherlands  
DOCUMENT TYPE: Journal  
FILE SEGMENT: 004 Microbiology  
015 Chest Diseases, Thoracic Surgery and  
Tuberculosis  
007 Pediatrics and Pediatric Surgery  
022 Human Genetics  
LANGUAGE: English

AB The antigenicity of the outer membrane components of mucoid *Pseudomonas aeruginosa* directly isolated from the sputum of a cystic fibrosis patient and those of the same isolate cultivated under iron-depleted conditions in the presence of sub-inhibitory concentrations of piperacillin and/or tobramycin was investigated by immunoblotting using the patient's own serum. The results indicated that iron-regulated membrane proteins as well as other major outer membrane proteins were antigenic and recognised by the patient's serum. The antibiotics used profoundly influenced the surface antigen pattern.

L8 ANSWER 63 OF 67 MEDLINE DUPLICATE 47  
ACCESSION NUMBER: 84006949 MEDLINE  
DOCUMENT NUMBER: 84006949 PubMed ID: 6413410  
TITLE: *Pseudomonas aeruginosa* isolates from patients with cystic fibrosis: a class of serum-sensitive, nontypable strains deficient in lipopolysaccharide O side chains.  
AUTHOR: Hancock R E; Mutharia L M; Chan L; Darveau R P; Speert D P; Pier G B  
CONTRACT NUMBER: AI 18465 (NIAID)  
SOURCE: INFECTION AND IMMUNITY, (1983 Oct) 42 (1) 170-7.  
Journal code: GO7; 0246127. ISSN: 0019-9567.  
PUB. COUNTRY: United States  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198311  
ENTRY DATE: Entered STN: 19900319  
Last Updated on STN: 19970203  
Entered Medline: 19831123

AB Twenty-six *Pseudomonas aeruginosa* strains from patients with cystic fibrosis were typed by the Fisher immunotyping scheme. Only 6 strains were agglutinated by a single typing serum, whereas 15 strains were agglutinated with more than one serum and 5 were not agglutinated by any serum. Neither the polyagglutinable nor the nonagglutinable strains were typable by hemagglutination inhibition or immunodiffusion, suggesting that these polyagglutinable strains did not express multiple serotype antigens, but were instead being agglutinated by antibody to nonserotype determinants. Four typable isolates were resistant to pooled normal human serum, whereas the 12 polyagglutinable and nonagglutinable isolates studied were very sensitive to normal human serum. The outer membranes of 16 strains were isolated and characterized. The data suggested, in general, strong conservation of outer membrane

protein patterns. Lipopolysaccharides (LPS) were purified by a new technique which allowed isolation of both rough and smooth LPS in high yields. Three of four typable, serum-resistant strains examined had amounts of smooth, O-antigen-containing LPS equivalent to our laboratory wild type, *P. aeruginosa* PAO1 strain H103. In contrast, 10 of 12 polyagglutinable or nonagglutinable, serum-sensitive strains had very little or no smooth, O-antigen-containing LPS, and the other two contained less smooth LPS than our wild-type strain H103. In agreement with this data, five independent, rough, LPS O-antigen-deficient mutants of strain H103 were nontypable and serum sensitive. We suggest that the LPS defects described here represent a significant new property of many *P. aeruginosa* strains associated with cystic fibrosis.

L8 ANSWER 64 OF 67 MEDLINE DUPLICATE 48  
 ACCESSION NUMBER: 84006999 MEDLINE  
 DOCUMENT NUMBER: 84006999 PubMed ID: 6194119  
 TITLE: Immunogenicity of *Pseudomonas aeruginosa* outer membrane antigens examined by crossed immunoelectrophoresis.  
 AUTHOR: Lam J S; Mutharia L M; Hancock R E; Hoiby N; Lam K; Baek L; Costerton J W  
 SOURCE: INFECTION AND IMMUNITY, (1983 Oct) 42 (1) 88-98.  
 Journal code: GO7; 0246127. ISSN: 0019-9567.  
 PUB. COUNTRY: United States  
 Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 198311  
 ENTRY DATE: Entered STN: 19900319  
 Last Updated on STN: 19900319  
 Entered Medline: 19831123

AB By crossed immunoelectrophoresis 36 different anode-migrating **antigens** were demonstrated in sonicated **antigen** preparations of *Pseudomonas aeruginosa*. We numbered these **antigens** to establish a reference precipitin pattern. **Antigen** no. 31 was identified as the lipopolysaccharide (LPS) **antigen**, because it was found to be responsible for the O-group specificity and because it reacted with anti-LPS monoclonal antibodies and with *Limulus* amoebocyte lysate. Purified **outer membrane proteins** F (porin), H2, and I used as **antigens** formed precipitins with the reference antibodies, thus establishing their **antigenicity**. LPS that copurified with protein F and slightly contaminated protein H2 was detectable as an extra precipitin (**antigen** no. 31). The use of monoclonal antibodies specific for smooth LPS and rough LPS revealed different **antigenic** determinants in the LPS molecule and suggested that **antigen** no. 5 could be the core region of the LPS which is equivalent to the rough LPS. Antibodies against these outer membrane **antigens** were detected in patients with chronic *P. aeruginosa* pneumonia and in patients with acute *P. aeruginosa* bacteremia. Antibodies with the same specificity were also found in rats chronically infected with *P. aeruginosa* 7 days postinfection. This demonstrates the surface accessibility and **antigenic** reactivity of outer membrane **antigens**.

L8 ANSWER 65 OF 67 MEDLINE DUPLICATE 49  
 ACCESSION NUMBER: 83058257 MEDLINE  
 DOCUMENT NUMBER: 83058257 PubMed ID: 6183370  
 TITLE: Outer membrane proteins of *Pseudomonas aeruginosa* serotype strains.  
 AUTHOR: Mutharia L M; Nicas T I; Hancock R E  
 SOURCE: JOURNAL OF INFECTIOUS DISEASES, (1982 Dec) 146 (6) 770-9.  
 Journal code: IH3; 0413675. ISSN: 0022-1899.  
 PUB. COUNTRY: United States  
 Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals  
 ENTRY MONTH: 198301  
 ENTRY DATE: Entered STN: 19900317  
 Last Updated on STN: 19900317  
 Entered Medline: 19830127

AB The basis of differentiation of *Pseudomonas aeruginosa* into the 17 serotypes of the International Antigenic Typing Scheme is differences in an outer membrane glycolipid, lipopolysaccharide (LPS). This observation, together with the high toxicity and pyrogenicity of LPS, has led to the search for alternative "common" antigens for use as vaccines. The relation between the major outer membrane proteins of serotype strains was studied in three ways. By demonstrating conservation of outer membrane protein receptors for bacteriophages, a high similarity of outer membrane protein patterns on sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) gels, and antigenic cross-reactivity of major outer membrane proteins, it was shown that the major outer membrane proteins were closely related. Radioiodinated antibodies to outer membrane proteins interacted with outer membrane proteins after SDS-PAGE separation and electrophoretic blotting of the separated outer membrane proteins into nitrocellulose paper. This demonstrated that major outer membrane proteins F, H2, and I were antigenically related in all serotype strains.

L8 ANSWER 66 OF 67 MEDLINE DUPLICATE 50  
 ACCESSION NUMBER: 82006469 MEDLINE  
 DOCUMENT NUMBER: 82006469 PubMed ID: 6792080  
 TITLE: Antibodies to cell envelope proteins of *Pseudomonas aeruginosa* in cystic fibrosis patients.  
 AUTHOR: Fernandes P B; Kim C; Cundy K R; Haung N N  
 SOURCE: INFECTION AND IMMUNITY, (1981 Aug) 33 (2) 527-32.  
 Journal code: GO7; 0246127. ISSN: 0019-9567.  
 PUB. COUNTRY: United States  
 Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 198111  
 ENTRY DATE: Entered STN: 19900316  
 Last Updated on STN: 19900316  
 Entered Medline: 19811118

AB Many vaccines containing somatic and secreted antigens of

*Pseudomonas aeruginosa* have been reported. The vaccines containing lipopolysaccharide have been found to provide type-specific protection, but the endotoxin content of these vaccines does not make it feasible to use them in patients who are already debilitated. **Outer membrane proteins** could be effective as vaccines, as they can be purified free of lipopolysaccharide, and also because they are common to all serotypes of *P. aeruginosa*. To be effective as a vaccine, such proteins must be immunogenic and accessible from the outside of the intact bacterial cell. In this study, we showed that systemic antibodies were produced frequently to two cell envelope proteins with masses of 58,500 and 37,500 daltons and occasionally to 34,000-dalton protein of *P. aeruginosa* in cystic fibrosis patients with chronic lung infections. In rabbits immunized with whole, fixed cells of *P. aeruginosa*, antibodies were also produced against the 58,500-dalton proteins. Thus, the 58,500-dalton cell envelope protein of *P. aeruginosa* was the only immunogenic protein that was accessible to the immune system when whole, fixed cells were used for immunization. These serum antibodies did not protect the cystic fibrosis patients against further lung infection with *P. aeruginosa*.

L8 ANSWER 67 OF 67 MEDLINE  
 ACCESSION NUMBER: 80008032 MEDLINE  
 DOCUMENT NUMBER: 80008032 PubMed ID: 479830  
 TITLE: Antigenic cross-reactivity of major outer membrane proteins in enterobacteriaceae species.  
 AUTHOR: Hofstra H; Dankert J  
 SOURCE: JOURNAL OF GENERAL MICROBIOLOGY, (1979 Apr) 111 (2) 293-302.  
 PUB. COUNTRY: ENGLAND: United Kingdom  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 197911  
 ENTRY DATE: Entered STN: 19900315  
 Last Updated on STN: 19900315  
 Entered Medline: 19791121

AB The protein constituents in the outer membrane (OM) of several serotypes of *Escherichia coli* and some other Enterobacteriaceae cross-reacted **antigenically**. Solubilized OM preparations of these bacteria were applied in interfacial precipitin tests to antisera elicited in rabbits against whole bacterial cells, absorbed with their appropriate lipopolysaccharide before testing. The resulting immunocomplexes were analysed on polyacrylamide gels. Protein profiles of the immunoprecipitates showed a considerable **antigenic cross-reactivity of outer membrane proteins** between most *E. coli* serotypes. Cross-reactivity, though substantially lower, was also found with OM from three other Enterobacteriaceae species, but was not detectable with *Pseudomonas aeruginosa* OM. When OM preparations were solubilized at room temperature, the peptidoglycan-bound proteins in the molecular weight range 37,000 to 41,000 predominated in the protein profiles of the immunocomplexes. In profiles of immunocomplexes obtained with boiled OM preparations, a heat-modifiable protein (mol. wt 33,000) predominated. The major OM

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proteins of the Gram-negative bacterium may therefore play a role as common surface **antigens** of the family of Enterobacteriaceae.

(FILE 'CAPLUS', MEDLINE, BIOSIS, EMBASE, WPIDS, JICST-EPLUS, JAPIO, PHIC, PHIN, TOXLIT, TOXCENTER' ENTERED AT 09:59:37 ON 01 MAR 2002)

L9 639 S CRIPPS A?/AU  
L10 1501 S CLANCY R?/AU  
L11 241 S DUNKLEY M?/AU  
L12 139 S KYD J?/AU  
L13 8 S L9 AND L10 AND L11 AND L12  
L14 433 S L9 AND (L10 OR L11 OR L12)  
L15 90 S L10 AND (L11 OR L12)  
L16 18 S L11 AND L12  
L17 1979 S L9 OR L10 OR L11 OR L12  
L18 8 S (L14 OR L15 OR L17) AND L4  
L19 26 S L13 OR L16 OR L18  
L20 10 DUP REM L19 (16 DUPLICATES REMOVED)

-Author(s)

L20 ANSWER 1 OF 10 TOXLIT  
ACCESSION NUMBER: 2001:28842 TOXLIT  
DOCUMENT NUMBER: CA-135-029894M  
TITLE: Novel Pseudomonas aeruginosa protein sequences and their uses as antigen/immunogen/vaccine, in detection/diagnosis, and screening anti-microbial targets.  
AUTHOR: Cripps AW; Kyd JM; Thomas LD  
SOURCE: (2001). PCT Int. Appl. PATENT NO. 0140473 06/07/2001 (Provalis UK Limited).  
CODEN: PIXXD2.  
PUB. COUNTRY: UNITED KINGDOM  
DOCUMENT TYPE: Patent  
FILE SEGMENT: CA  
LANGUAGE: English  
OTHER SOURCE: CA 135:29894  
ENTRY MONTH: 200107

AB The present inventors have employed protein purifn. methods to isolate homogeneous prepn. of both **outer membrane proteins (OMPs)** and cytosolic proteins. Using a method of Zwittergent extn. with modifications to liq. column chromatog. and gel electrophoresis steps, several proteins have been purified, identified and assessed for their vaccine potential. The proteins were denoted by their mol. mass and their identity confirmed by amino-terminal sequencing. The inventors have isolated and identified proteins from a prepn. of *P.aeruginosa*. These proteins are designated Pa13, Pa20 (ACP), Pa 40 (amidase), Pa45 and Pa80. Pa20 was ascribed as ACP because it had homol. with a protein from *Pseudomonas syringa* and *P. aeruginosa*. Pa40 had homol. with a known *P. aeruginosa* aliph. amidase. The proteins designated Pa13, Pa45 and Pa80 were not found following this search. The invention further relates to the uses of antigenic proteins derived from *Pseudomonas aeruginosa* in the treatment, prophylaxis and diagnosis of *P.aeruginosa* infection.

L20 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 1  
ACCESSION NUMBER: 2000:16744 CAPLUS  
DOCUMENT NUMBER: 132:150389

Searcher : Shears 308-4994

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TITLE: A P5 peptide that is homologous to peptide 10 of **OprF** from *Pseudomonas aeruginosa* enhances clearance of non-typeable *Haemophilus influenzae* from acutely infected rat lung in the absence of detectable peptide-specific antibody

AUTHOR(S): Webb, Dianne C.; Cripps, Allan W.

CORPORATE SOURCE: The Gadi Research Center, Faculty of Applied Science and Design, University of Canberra, and The Membrane Biochemistry Group, Division of Biochemistry and Molecular Biology, John Curtin School of Medical Research, Australian National University, Canberra City, 2601, Australia

SOURCE: Infect. Immun. (2000), 68(1), 377-381  
CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Non-typeable *H. influenzae* (NTHi) is an opportunistic pathogen assocd. with otitis media and the exacerbation of chronic bronchitis. This study reports the vaccine potential of 3 peptides representing conserved regions of the NTHi P5 outer membrane protein which have been fused to a promiscuous measles virus F protein T-cell epitope (MVF). The peptides correspond to a region in surface loop 1 (MVF/L1A), the central region of loop 4 (MVF/L4), and a C-terminal region homologous to peptide 10 of **OprF** from *P. aeruginosa* (MVF/H3). Immunization of rats with MVF/H3 was the most efficacious in reducing the no. of viable NTHi in both the broncho-alveolar lavage fluid (74%) and lung homogenates (70%), compared to control rats. Importantly, despite increased rates of clearance, immunization with MVF/H3 elicited poor antibody responses, suggesting that cell-mediated rather than humoral responses play an important role in the enhanced clearance of NTHi in this model.

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2

ACCESSION NUMBER: 2000:526208 CAPLUS

DOCUMENT NUMBER: 134:264778

TITLE: Catalase immunization from *Pseudomonas aeruginosa* enhances bacterial clearance in the rat lung

AUTHOR(S): Thomas, L. D.; Dunkley, M. L.; Moore, R.; Reynolds, S.; Bastin, D. A.; Kyd, J. M.; Cripps, A. W.

CORPORATE SOURCE: Gadi Res. Cent., Div. Sci. Design, Univ. Canberra, Canberra, Australia

SOURCE: Vaccine (2000), 19(2-3), 348-357  
CODEN: VACCDE; ISSN: 0264-410X

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB *Pseudomonas aeruginosa* is a common cause of infection in immunocompromised patients and is the major contributor to morbidity in individuals with cystic fibrosis (CF). The antibiotic resistance shown by this pathogen and morbidity in patients with chronic infection has encouraged investigations into the development of a



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vaccine. This study reports the purifn. of a 60 kDa protein, isolated from a mucoid strain of *P. aeruginosa*, identified by amino acid sequence anal. as the catalase protein (KataA). A rat model of acute *P. aeruginosa* respiratory infection was used to investigate the immunogenicity of KataA and det. the potential of mucosal immunization with KataA to protect against infection. Immunization regimens compared a single intra-Peyer's patch (IPP) immunization with an IPP primary inoculation followed by an intratracheal boost to the lungs. Mucosal immunization with KataA resulted in significant pulmonary clearance of both homologous ( $p < 0.001$ ) and heterologous ( $p < 0.05$ ) strains of *P. aeruginosa*. Both immunization regimens enhanced bacterial clearance, increased the rate of recruitment of phagocytes to the bronchoalveoli and induced KataA-specific antibody. However, the regimen that included a boost induced a more effective immune response that also resulted in better clearance of *P. aeruginosa* from the lungs. Mucosal immunization induced KataA-specific antibodies in the serum and the bronchoalveolar lavage, and KataA-specific lymphocyte proliferation in vitro in cells isolated from the mesenteric lymph nodes of immunized rats. The data presented suggests that KataA has the potential to afford a protective immune response against pulmonary infection by *P. aeruginosa*.

REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L20 ANSWER 4 OF 10 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
ACCESSION NUMBER: 1999:398204 BIOSIS  
DOCUMENT NUMBER: PREV199900398204  
TITLE: The *Pseudomonas aeruginosa* catalase is a protective antigen.  
AUTHOR(S): Thomas, L. (1); Dunkley, M.; Bastin, D.  
(1); Kyd, J. (1); Cripps, A. (1)  
CORPORATE SOURCE: (1) Gadi Research Centre, University of Canberra,  
Canberra Australia  
SOURCE: Immunology Letters, (June 15, 1999) Vol. 69, No. 1,  
pp. 174.  
Meeting Info.: 10th International Congress of Mucosal  
Imunology Amsterdam, Netherlands June 27-July 1, 1999  
ISSN: 0165-2478.  
DOCUMENT TYPE: Conference  
LANGUAGE: English

L20 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 3  
ACCESSION NUMBER: 1998:527345 CAPLUS  
DOCUMENT NUMBER: 129:160619  
TITLE: *Pseudomonas aeruginosa* antigen  
INVENTOR(S): Cripps, Allan William; Kyd,  
Jannelle; Dunkley, Margaret;  
Clancy, Robert Llewellyn  
PATENT ASSIGNEE(S): Auspharm International Limited, Australia;  
Chapman, Paul, William  
SOURCE: PCT Int. Appl., 23 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

Searcher : Shears 308-4994

09/359426

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9832769	A1	19980730	WO 1998-GB217	19980126
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
ZA 9800587	A	19990723	ZA 1998-587	19980123
AU 9857717	A1	19980818	AU 1998-57717	19980126
EP 980389	A1	20000223	EP 1998-901378	19980126
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2001511125	T2	20010807	JP 1998-531741	19980126
PRIORITY APPLN. INFO.:			GB 1997-1489	A 19970124
			WO 1998-GB217	W 19980126

AB A novel antigen from *P. aeruginosa* is provided. The use of the antigen in detecting/diagnosing *P. aeruginosa* as well as its use in eliciting an immune response are also provided.

L20 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 4  
 ACCESSION NUMBER: 1997:358726 CAPLUS  
 DOCUMENT NUMBER: 127:107649  
 TITLE: Vaccine strategies against *Pseudomonas aeruginosa* infection in the lung  
 AUTHOR(S): Cripps, A. W.; Dunkley, M. L.; Clancy, R. L.; Kyd, J.  
 CORPORATE SOURCE: Fac. Applied Science, Univ. Canberra, Belconnen, 2616, Australia  
 SOURCE: Behring Inst. Mitt. (1997), 98 (New Approaches to Bacterial Vaccine Development), 262-268  
 CODEN: BHIMA2; ISSN: 0301-0457  
 PUBLISHER: Medizinische Verlagsgesellschaft mbH  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: English

AB A review with 48 refs. is given on the concept of mucosal immunization against respiratory infection with *P. aeruginosa*. Initial studies in an acute animal model clearly demonstrated that mucosal immunization with a killed whole bacterial cell prepn. could induce protective immune responses in the lung. Subsequent studies showed that the protective immune mechanisms were dependent on antigen specific CD4+ T cells, the activation of alveolar macrophages, the recruitment and activation of polymorphs, predominantly neutrophils, the controlled secretion of tumor necrosis factor .alpha., interleukin-1, and interferon .gamma., and the presence of antibody. A pre-clin. human trial of an oral whole killed cell prepn. was completed with no adverse side effects. A limited open trial in patients with bronchiectasis was also completed. The results demonstrate that after oral vaccination, specific lymphocyte responses were obsd. to *P. aeruginosa*.

L20 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 5  
 ACCESSION NUMBER: 1995:718946 CAPLUS

09/359426

DOCUMENT NUMBER: 123:141662  
TITLE: Enhanced respiratory clearance of nontypeable  
Haemophilus influenzae following mucosal  
immunization with P6 in a rat model  
AUTHOR(S): Kyd, Jennelle M.; Dunkley,  
Margaret L.; Cripps, Allan W.  
CORPORATE SOURCE: Discip. Pathol., Univ. Newcastle, New South  
Wales, 2308, Australia  
SOURCE: Infect. Immun. (1995), 63(8), 2931-40  
CODEN: INFIBR; ISSN: 0019-9567  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Nontypeable Haemophilus influenzae (NTHi) is a common cause of infection of the respiratory tract in children and adults. The search for an effective vaccine against this pathogen has focused on components of the outer membrane, and peptidoglycan-assocd. lipoprotein P6 is among the proposed candidates. This study investigated the immunogenicity of P6 in a rat respiratory model. P6 was purified from two strains of NTHi, one capsule-deficient strain and an H. influenzae type b strain, and assessed for clearance of both homologous and heterologous bacterial strains following mucosal immunization. A protective immune response was detd. by enhancement of pulmonary clearance of live bacteria and an increased rate of recruitment of phagocytic cells to the lungs. This was most effective when Peyer's patch immunization was accompanied by an intratracheal (IT) boost. However, the rate of bacterial clearance varied between strains, which suggests some differences in anti-P6 immunol. defenses recognizing the expression of the highly conserved P6 lipoprotein on the bacterial surface in some strains. P6-specific antibodies in both serum and bronchoalveolar lavage fluid were cross-reactive and did not differ significantly in strain specificity, demonstrating that difference in clearance was unlikely due to differences in P6-specific antibody levels. Serum homologous and heterologous P6-antibody was bactericidal against NTHi even when enhanced clearance had not been obsd. Peyer's patch immunization induced P6-specific CD4+ T-helper cell proliferation in lymphocytes isolated from the mesenteric lymph nodes. An IT boost increased the level of P6-specific antibodies in serum and bronchoalveolar lavage fluid, and P6-specific mesenteric node lymphocyte proliferation. Cells from rats immunized with P6 demonstrated proliferation following stimulation with P6 from nonhomologous strains; however, there was some variation in proliferative responses to P6 from different strains in lymphocytes isolated from animals immunized with killed bacteria. The increase in P6-specific antibodies and T-helper cell responses following an IT boost correlated with an increased rate of recruitment of phagocytic cells and enhanced bacterial clearance of both homologous and heterologous bacteria in the lungs. The data suggests that P6 has the potential to afford protection against pulmonary infection by NTHi following the induction of effective antigen-specific B- and T-cell responses in mucosal tissues.

L20 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 6  
ACCESSION NUMBER: 1995:969979 CAPLUS  
DOCUMENT NUMBER: 124:84182  
TITLE: Immunity to Pseudomonas aeruginosa  
induced by OprF following intestinal  
immunization

Searcher : Shears 308-4994

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AUTHOR(S): Cripps, Allan W.; Dunkley, Margaret L.; Taylor, Diana C.; Cousins, Stephen; Clancy, Robert L.  
CORPORATE SOURCE: Hunter Area Pathology Service, Newcastle, 2310, Australia  
SOURCE: Adv. Exp. Med. Biol. (1995), Volume Date 1995, 371B, 761-3  
CODEN: AEMBAP; ISSN: 0065-2598  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB In this study an acute respiratory infection model has been utilized to det. the vaccine efficacy of outer membrane protein F (OprF) when administered by the intestinal route.

L20 ANSWER 9 OF 10 MEDLINE DUPLICATE 7  
ACCESSION NUMBER: 96167032 MEDLINE  
DOCUMENT NUMBER: 96167032 PubMed ID: 8595919  
TITLE: Pulmonary immunity to Pseudomonas aeruginosa.  
AUTHOR: Cripps A W; Dunkley M L; Clancy R L; Kyd J  
CORPORATE SOURCE: Faculty of Applied Science, University of Canberra, Australia.  
SOURCE: IMMUNOLOGY AND CELL BIOLOGY, (1995 Oct) 73 (5) 418-24. Ref: 84  
Journal code: GH8; 8706300. ISSN: 0818-9641.  
PUB. COUNTRY: Australia  
Journal; Article; (JOURNAL ARTICLE)  
General Review; (REVIEW)  
(REVIEW, TUTORIAL)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199604  
ENTRY DATE: Entered STN: 19960424  
Last Updated on STN: 19970203  
Entered Medline: 19960416

AB Pseudomonas aeruginosa, an opportunistic bacterial pathogen, is a major course of morbidity and mortality in subjects with compromised respiratory function despite the significant advances in therapeutic practices. The bacteria produces an armoury of products which modify its infective niche to ensure bacterial survival. The role of antibody in protection against pulmonary infection remains poorly defined. Protection appears to be associated with opsonizing antibody whilst some other antibody responses may be deleterious and promote further lung damage. Cell mediated responses are clearly important in protection against infection. This review proposes a vaccine strategy aimed at enhancing specific T cell responses in the lung which, though T cell-derived cytokines, drive the recruitment of neutrophils to the lung and the subsequent activation of these cells results in the clearance of bacteria from the lung.

L20 ANSWER 10 OF 10 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
ACCESSION NUMBER: 1994:139127 BIOSIS  
DOCUMENT NUMBER: PREV199497152127  
TITLE: Variation in protection following immunization with P6 to nontypable Haemophilus influenzae challenge.  
AUTHOR(S): Kyd, Jennelle; Dunkley, Margaret; Clancy, Robert; Crips, Allan  
CORPORATE SOURCE: Fac. Med., Univ. Newcastle, Callaghan, NSW 2308

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SOURCE: Australia  
Journal of Leukocyte Biology, (1993) Vol. 0, No.  
SUPPL., pp. 112.  
Meeting Info.: International Congress on the  
Regulation of Leukocyte Production and Immune  
Function held at the Joint Meeting of the  
Australasian Society for Immunology and Society for  
Leukocyte Biology Sydney, New South Wales, Australia  
December 1-5, 1993  
ISSN: 0741-5400.

DOCUMENT TYPE: Conference  
LANGUAGE: English

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01mar02 10:10:36 User219783 Session D1800.2

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Derwent announces file enhancements. Please see HELP NEWS 357.  
File 113:European R&D Database 1997  
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\*File 113: This file is closed (no updates)

Set Items Description

Set	Items	Description
S1	16534	OUTER(W)MEMBRAN?(W)PROTEIN? ? OR OMP? ? OR MOMP? ? OR OPR?
	?	
S2	1716	S1 AND AERUGINOS?
S3	968	L2 AND ANTIGEN?
S4	1116	S1(S)AERUGINOS?
S5	105	S4(S)ANTIGEN?
S6	88	RD (unique items)
S7	849	S1(10N)AERUGINOS?
S8	46	S7(10N)ANTIGEN?
S9	41	RD (unique items)

-key terms

>>>No matching display code(s) found in file(s): 65, 113

9/3,AB/1 (Item 1 from file: 35)  
DIALOG(R)File 35:Dissertation Abs Online  
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01490876 AADAAINN06084

THE DEVELOPMENT OF THE PSEUDOMONAS \*AERUGINOSA\*\*\* \*OUTER\*\*\* \*MEMBRANE\*\*\*  
\*PROTEIN\*\*\* \*OPRF\*\*\* AS A PRESENTATION VECTOR FOR FOREIGN \*ANTIGENIC\*\*\*  
DETERMINANTS

Author: WONG, REBECCA SUK YI

Degree: PH.D.

Year: 1995

Corporate Source/Institution: THE UNIVERSITY OF BRITISH COLUMBIA  
(CANADA) (2500)

Source: VOLUME 57/03-B OF DISSERTATION ABSTRACTS INTERNATIONAL.  
PAGE 1705. 198 PAGES

ISBN: 0-612-06084-5

A variety of systems have been developed to improve the presentation

Searcher : Shears 308-4994

of foreign antigenic determinants ('epitopes') by inserting them in the context of carrier proteins. The goals of this study were to develop the *Pseudomonas aeruginosa* outer membrane protein OprF as a carrier for foreign epitopes and to study the effect of the mode of presentation on the antigenicity of the presented epitope. The model epitope used in this study was the 4-amino acid repeating epitope (NANP) of the circumsporozoite protein of the malaria parasite, *Plasmodium falciparum*. Linker-insertion mutagenesis was carried out to create 11 "permissive" sites which allowed the insertion of 4 extra amino acids. Two series of OprF::malarial epitope hybrid proteins, the positional hybrids and the multiple-repeat hybrids, were constructed by inserting oligonucleotides encoding the epitope into the linker-insertion sites of oprF. The effects of the insertion position and the length of the epitope on its antigenicity were studied by ELISA using outer membranes and by whole cell dot blot analysis. It was shown that the antigenicity of the epitope varied when inserted at different positions of OprF, while it increased with the length of the epitope at two of the three insertion positions studied. These data were employed to revise the membrane topology model of OprF and have improved our understanding of the epitopes recognized by the OprF-specific monoclonal antibodies. Generalizations about the influence of surrounding amino acids on the antigenicity of the inserted epitope are proposed. A targeted study of immunogenicity showed that a 19-amino acid malarial epitope was significantly more immunogenic than a 7-amino acid epitope when inserted at an N-terminal insertion site of OprF. A parallel immunogenicity study of two versions of glutathione S-transferase (GST)::malarial epitope fusion proteins demonstrated that neither an 11- nor a 19-amino acid epitope fused to the C-terminus of GST was immunogenic. This study demonstrated for the first time that OprF can be used as a carrier to generate and detect anti-epitope antibodies in immunized animals and in immunoassays respectively.

9/3,AB/2 (Item 2 from file: 35)  
 DIALOG(R)File 35:Dissertation Abs Online  
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01429150 AADAAI9529722  
 USE OF SYNTHETIC PEPTIDES TO IDENTIFY SURFACE-EXPOSED, LINEAR B-CELL  
 EPITOPES WITHIN OUTER MEMBRANE PROTEIN F OF PSEUDOMONAS AERUGINOSA  
 Author: HUGHES, EILEEN MARIE  
 Degree: PH.D.  
 Year: 1995  
 Corporate Source/Institution: LOUISIANA STATE UNIVERSITY MEDICAL CENTER  
 AT SHREVEPORT (0786)  
 Source: VOLUME 56/04-B OF DISSERTATION ABSTRACTS INTERNATIONAL.  
 PAGE 1821. 150 PAGES

Synthetic peptide 13 to 15 amino acids in length were synthesized initially for ten potential surface-exposed, \*antigenic\*\*\* regions of *Pseudomonas aeruginosa*\*\*\* \*outer\*\*\* \*membrane\*\*\* \*protein\*\*\* F selected by computer-assisted analysis. Based on the results obtained with those ten peptide, nine additional peptide were synthesized and analyzed. Each of the peptides, conjugated to keyhole limpet hemocyanin, was used to immunize groups of mice, with antisera subsequently collected from each group of the mice. The presence of IgG antibodies capable of reacting with the peptide was detected by enzyme-linked immunosorbent assay (ELISA) using each of the peptides as the ELISA antigens. Each of the peptide antisera was screened for the presence of IgG antibodies that could bind to the surface of intact

cells of strains representing the seven heterologous Fisher-Devlin immunotypes of *P. aeruginosa* by use of an ELISA with whole cells of the various strains as the ELISA antigens. Flow cytometry was also employed using cells of Fisher-Devlin immunotype 2. The functional ability of the peptide-directed antisera was tested by whole-blood phagocytosis assays using both human and murine polymorphonuclear leukocytes. Peptide #10 (residues 305-318) elicited whole-cell reactive antibodies at high titers; peptide #9 (residues 261-274) and peptide #18 (residues 282-295) elicited whole-cell-reactive antibodies at intermediate titers. Based on our findings and on our understanding of the arrangement of other porin proteins within the outer membrane, we proposed a model for the arrangement of protein F within the outer membrane of *P. aeruginosa*.

Active immunization with peptide #9 and #10 conferred protection in the rat model of chronic *P. aeruginosa* infection. In an effort to elicit a maximal antibody response, other combinations of systemic and mucosal routes of immunization were explored. Active immunization with peptide #9 and #10 conferred protection in the murine acute pneumonia model, whereas #18 did not confer protection. These results indicate that peptide #10 (NATAEGRAINRRVE) and #9 (TDAYNQKLSERRAN) appear to have potential for further development as protective immunogens.

9/3,AB/3 (Item 3 from file: 35)  
 DIALOG(R)File 35:Dissertation Abs Online  
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01320790 AADC311351  
 INFLUENCE OF IRON ON BACTERIAL INFECTIONS IN LEUKAEMIA  
 Author: YATES, JACQUELINE MARIE  
 Degree: PH.D.  
 Year: 1992  
 Corporate Source/Institution: UNIVERSITY OF ASTON IN BIRMINGHAM (UNITED KINGDOM) (0734)  
 Source: VOLUME 54/04-C OF DISSERTATION ABSTRACTS INTERNATIONAL.  
 PAGE 1172.

The influence of iron metabolism, both on the invading bacterial pathogen and in the host is widespread and often appears to be crucial in determining the outcome of an infection. This study involved the investigation of leukaemia, a clinical disease where abnormal availability of iron may play a part in predisposing patients to bacterial infection. The iron status throughout a Gram-negative septicaemia and in 20 random, newly diagnosed leukaemic patients was assessed. The results revealed that the majority of the patients exhibited high serum iron levels and serum transferrin saturation often at 100%, with an inability to reduce the latter to within normal values during an infection episode. The antibody response to *P. aeruginosa*\*\*\*, *E. coli* and *K. pneumoniae* \*outer\*\*\* \*membrane\*\*\* \*protein\*\*\* (\*OMP\*\*\*) \*antigens\*\*\* were investigated by immunoblotting with sequential serum samples during infection in the leukaemic host. Antibodies to all the major OMPs were observed, although recognition of iron-regulated membrane proteins (IRMPs) was, in many cases, weak. Results from the enzyme-linked immunosorbent assay indicated that in all patients antibody titre in response to infection was poor.

Sub-MICs of mitomycin C significantly altered the surface characteristics of *P. aeruginosa*. The silver-stained SDS-PAGE gels of proteinase K digested whole cell lysates of strains PA01, 6750, M7 and PAJ indicated that core LPS was affected in the presence of mitomycin C. In contrast, the rough strain AK1012 showed no observable differences. Results



obtained using quantitative gas-liquid chromatographic analysis showed the amount of LPS fatty acids to be unaffected, however, the KDO and carbohydrate content in strains PAO1, 6750 and M7 under Fe<sup>+</sup> and Fe<sup>2+</sup> growth conditions were decreased by up to 4-fold in the presence of mitomycin C, indicating perturbed expression of LPS. The cell surface became significantly more hydrophobic in the *P. aeruginosa* strain, except AK1012 which was comparatively unaffected.

The induction of protein G (OprG) in *P. aeruginosa* was found to be a sensitive indicator of media iron. The data indicated that expression of OprG can be modulated by growth rate/phase, availability of iron and by the presence of ciprofloxacin in the growth medium.

9/3,AB/4 (Item 4 from file: 35)  
 DIALOG(R)File 35:Dissertation Abs Online  
 (c) 2002 ProQuest Info&Learning. All rts. reserv.

1044913 AAD0564642  
 CLONING AND CHARACTERIZATION OF THE OPRF GENE FOR PROTEIN F FROM  
 PSEUDOMONAS AERUGINOSA  
 Author: WOODRUFF, WENDY ANNE  
 Degree: PH.D.  
 Year: 1988  
 Corporate Source/Institution: THE UNIVERSITY OF BRITISH COLUMBIA  
 (CANADA) (2500)  
 Source: VOLUME 49/12-B OF DISSERTATION ABSTRACTS INTERNATIONAL.  
 PAGE 5158.

The *oprF* gene encoding porin protein F from *Pseudomonas aeruginosa* was cloned onto a cosmid vector into *Escherichia coli*. Protein F was expressed in large amounts in *E. coli* and retained its heat- and reduction-modifiable and immunological characteristics. The cloned *oprF* gene product was purified from *E. coli* and characterized with respect to pore-forming ability in black lipid bilayers. Small channels, with an average single channel conductance of approximately 0.4 nS, were observed. A similar small channel size was observed for native protein F. The *oprF* sequences were used as a DNA-DNA hybridization probe with chromosomal DNA from the 17 IATS (International \*Antigen\*\* Typing Scheme) strains of *P. aeruginosa*\*\*\*, 52 clinical isolates and the non-*aeruginosa*\*\*\* *Pseudomonads*. Conservation of \**oprF*\*\*\* sequences was observed among all the *P. aeruginosa*\*\*\* strains and to a lesser extent among the non-*aeruginosa* strains of the *P. fluorescens* rRNA homology group.

Insertion mutations in the *oprF* gene were created in vivo by Tn1 mutagenesis of the cloned gene in *E. coli* and in vitro by insertion of the streptomycin-encoding  $\Omega$  fragment into the cloned gene, followed by transfer of the mutated protein F gene back into *P. aeruginosa* and homologous recombination with the chromosome. The *oprF* mutants were characterized by gel electrophoresis and immunoblotting, and it was shown that the mutants had lost protein F. The *P. aeruginosa* *oprF* mutants were characterized with respect to growth rates, antibiotic permeability and cell surface hydrophobicity. The results of these studies indicated that major alterations in the cell surface had occurred and that the cells were unable to grow in a non-defined liquid medium without added electrolytes. Marginal differences were observed in MICs (minimum inhibitory concentrations) of hydrophilic antibiotics for the *oprF* mutants compared with their protein F-sufficient parents.

The putative roles of protein F in antibiotic permeability and general outer membrane permeability are discussed. Evidence for extensive

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homologies between protein F, the OmpA protein of *E. coli* and PIII of *Neisseria gonorrhoeae* are presented. A role for protein F in prophylactic anti-*Pseudomonas* therapy, as a target for vaccine development, is proposed.

9/3,AB/5 (Item 1 from file: 65)  
DIALOG(R)File 65:Inside Conferences  
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01819053 INSIDE CONFERENCE ITEM ID: CN018764711  
A Hybrid \*Outer\*\*\* \*Membrane\*\*\* \*Protein\*\*\* \*Antigen\*\*\* for Vaccination  
Against *Pseudomonas aeruginosa*\*\*\*  
Gabelsberger, J.; Knapp, B.; Bauersachs, S.; Lenz, U.  
CONFERENCE: New approaches to bacterial vaccine development-Symposium  
BEHRING INSTITUTE MITTEILUNGEN, 1997; VOL 98 P: 302-314  
The Institute, 1997  
ISSN: 0301-0457  
LANGUAGE: English DOCUMENT TYPE: Conference Papers  
CONFERENCE EDITOR(S): Von Specht, B. U.  
CONFERENCE SPONSOR: Behring Institute Research Communications  
CONFERENCE LOCATION: Munich, Germany  
CONFERENCE DATE: May 1996 (199605) (199605)

9/3,AB/6 (Item 1 from file: 77)  
DIALOG(R)File 77:Conference Papers Index  
(c) 2002 Cambridge Sci Abs. All rts. reserv.

02853157  
Supplier Accession Number: 92003157 V20N01  
Analysis of immunoglobulin G subclass responses in cystic fibrosis by  
immunoblot using whole *Pseudomonas aeruginosa* antigens and purified outer  
membrane proteins  
Likavcanova, E.; Lagace, J.  
Univ. Montreal, Montreal, Que., Canada  
91st General Meeting of the American Society for Microbiology 9120375  
Dallas, TX (USA) 5-9 May 1991  
American Society for Microbiology  
ASM, 1325 Massachusetts Avenue NW, Washington, DC 20005, USA, Poster  
Paper No. E83

9/3,AB/7 (Item 2 from file: 77)  
DIALOG(R)File 77:Conference Papers Index  
(c) 2002 Cambridge Sci Abs. All rts. reserv.

Supplier Accession Number: 87015732 V15N3  
Surface antigens of in vivo-grown *Pseudomonas aeruginosa* : Lung fluid and  
serum antibody response to outer membrane proteins and lipopolysaccharide  
in a rat model of chronic lung infection  
Cochrane, D.M.G.; Anwar, H.; Brown, M.R.W.; Lam, K.; Costerton, J.W.  
Aston Univ., Birmingham, UK  
American Society for Microbiology 87th Annual Meeting 8710293  
Atlanta, GA (USA) 1-6 Mar 1987  
American Society for Microbiology  
American Society for Microbiology, Publication Sales, 1913 I Street,  
N.W., Washington, DC 20006 (USA). Telephone: (202) 833-9680, Price: \$20.00  
(abstracts); \$3.00 (program) Abstract No. D98

Searcher : Shears 308-4994

9/3,AB/8 (Item 3 from file: 77)  
DIALOG(R)File 77:Conference Papers Index  
(c) 2002 Cambridge Sci Abs. All rts. reserv.

Supplier Accession Number: 86045626 V14N8  
Serum and local immune response to outer membrane protein antigens of  
*Pseudomonas aeruginosa* isolated without subculture from human burn wounds  
Ward, K.J.; Anwar, H.; Brown, M.R.W.; Wale, R.J.; Gowar, J.  
Microbiol. Res. Group, Dep. of Pharmaceut. Sci., Aston Univ., Burns Unit,  
Accident Hosp., Birmingham, UK  
American Society for Microbiology 86th Annual Meeting 8610146  
Washington, DC (USA) 23-28 Mar 1986  
American Society for Microbiology (ASM)  
American Society for Microbiology, 1913 I Street, N.W., Washington, DC  
20006 (USA), Abstract No. D148

9/3,AB/9 (Item 1 from file: 144)  
DIALOG(R)File 144:Pascal  
(c) 2002 INIST/CNRS. All rts. reserv.

13848646 PASCAL No.: 99-0025172  
Identification of a 25-aminoacid sequence from the major African swine  
fever virus structural protein VP72 recognised by porcine cytotoxic T  
lymphocytes using a lipoprotein based expression system  
LEITAO A; MALUR A; CORNELIS P; MARTINS C L V  
Laboratorio de Doencas Infecciosas, CHSA, Faculdade de Medicina  
Veterinaria, Rua Gomes Freire, 1199 Lisboa, Portugal; Centro de Veterinaria  
e Zootecnia, CIISA, Instituto de Investigacao Cientifica Tropical, Rua  
Gomes Freire, 1150 Lisbon, Portugal; Department  
Immunology-Parasitology-Ultrastructure Flanders Institute of Biotechnology  
and Vrije Universiteit Brussel, Paardenstraat 65, 1640 St. Genesius Rode,  
Belgium  
Journal: Journal of virological methods, 1998, 75 (1) 113-119  
Language: English  
Identification of African swine fever virus (ASFV) proteins recognised by  
cytotoxic T lymphocytes (CTL) from swine surviving ASFV/NH/P68 infection  
was assessed using expression vectors based on the *Pseudomonas*  
\*aeruginosa\*\*\* outer membrane lipoprotein I gene (\*oprI\*\*\*). Viral  
\*antigens\*\*\* expressed as fusion lipoproteins were shown to be taken  
efficiently by porcine blood-derived macrophages incubated with outer  
membrane protein preparations from transformed *E. coli*. To assess  
recognition by CTL the fusion lipoprotein-treated macrophages were used as  
targets in SUP 5 SUP 1 Cr release microcytotoxicity assays. Using this  
approach it was shown that the aminoacid sequence HKPHQSKPILTDENDTQRTCSHTNP  
from the major structural ASFV protein (VP72), encoded by a recombinant  
clone (pVUB72) is presented by macrophages, which are lysed under  
restriction of SLA class I antigens. Overall, the results demonstrate that  
the oprI based vectors are valuable tools to study ASFV-specific CTL  
activity.

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9/3,AB/10 (Item 2 from file: 144)  
DIALOG(R)File 144:Pascal

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12641748 PASCAL No.: 96-0335486

The effect of the length of a malarial epitope on its \*antigenicity\*\*\* and immunogenicity in an epitope presentation system using the *Pseudomonas aeruginosa*\*\*\* \*outer\*\*\* \*membrane\*\*\* \*protein\*\*\* \*OprF\*\*\* as the carrier

WONG R S Y; HANCOCK R E W

Department of Microbiology and Immunology, #300-6174 University Boulevard, University of British Columbia, Vancouver, B.C. V6T 1Z3, Canada

Journal: FEMS microbiology letters, 1996, 140 (2-3) 209-214

Language: English

This study showed that the antigenicity of a malarial epitope increased with the length of the epitope when inserted at positions aa SUP 2 SUP 6 (amino acid position 26) and aa SUP 1 SUP 9 SUP 6, but not at aa SUP 2 SUP 1 SUP 3, of the *Pseudomonas aeruginosa* major outer membrane protein OprF (326 amino acids). Immunization studies showed that a 19-aa epitope was significantly more immunogenic than a 7-aa epitope when inserted at aa SUP 2 SUP 6 of OprF, while neither an 11- nor a 19-aa epitope fused to the C-terminus of glutathione S-transferase was immunogenic.

9/3,AB/11 (Item 3 from file: 144)

DIALOG(R)File 144:Pascal

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12313740 PASCAL No.: 95-0551208

Use of synthetic peptides to identify surface-exposed, linear B-cell epitopes within outer membrane protein F of *Pseudomonas aeruginosa*

GILLELAND H E JR; HUGHES E E; GILLELAND L B; MATTHEWS-GREER J M; STACZEK J

Louisiana State univ. medical cent., school medicine Shreveport, dep. microbiology immunology, Shreveport LA 71130-3932, USA

Journal: Current microbiology, 1995, 31 (5) 279-286

Language: English

In a previous study (Hughes EE, Gilleland LB, Gilleland HE Jr. (1992) Infect Immun 60 :3497-3503), ten synthetic peptides were used to test for surface-exposed \*antigenic\*\*\* regions located throughout the length of \*outer\*\*\* \*membrane\*\*\* \*protein\*\*\* F of *Pseudomonas aeruginosa*\*\*\*. An additional nine peptides of 11-21 amino acid residues in length were synthesized. Antisera collected from mice immunized with each of the 19 synthetic peptides conjugated to keyhole limpet hemocyanin were used to determine which of the peptides had elicited antibodies capable of reacting with the surface of whole cells of the various heterologous Fisher-Devlin immunotypes of *P. aeruginosa*. Cell surface reactivity was measured by an enzyme-linked immunosorbent assay (ELISA) with whole cells of the various immunotypes as the ELISA antigens and by opsonophagocytic uptake assays with the various peptide-directed antisera, immunotype 2 *P. aeruginosa* cells, and polymorphonuclear leukocytes of human and murine origin. Three peptides located in the carboxy-terminal portion of protein F elicited antibodies with the greatest cell-surface reactivity. Peptide 9 (TDAYNQKLSERRAN), peptide 10 (NATAEGRAINRRVE), and peptide 18 (NEYGVEGGRVNAVG) appear to have sufficient potential for further development as vaccine candidates for immunoprophylaxis against infections caused by *P. aeruginosa*. A topological model for the arrangement of protein F within the outer membrane of *P. aeruginosa* is presented.

9/3,AB/12 (Item 4 from file: 144)

09/359426

DIALOG(R)File 144:Pascal  
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10477416 PASCAL No.: 92-0680910

Protection of immunosuppressed mice against infection with *Pseudomonas aeruginosa* by recombinant *P. aeruginosa* lipoprotein I and lipoprotein I-specific monoclonal antibodies

FINKE M; MUTH G; REICHHELM T; THOMA M; DUCHENE M; HUNGERER K D; DOMDEY H;  
VON SPECHT B U

Chirurgische Universitaetsklin., chirurgische Forschung, Freiburg im  
Breisgau 7800, Federal Republic of Germany

Journal: Infection and immunity, 1991, 59 (4) 1251-1254

Language: English

9/3,AB/13 (Item 1 from file: 440)

DIALOG(R)File 440:Current Contents Search(R)  
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13500522 GENUINE ARTICLE#: 521XD NUMBER OF REFERENCES: 43

TITLE: LcrQ and SycH function together at the Ysc type III secretion system  
in *Yersinia pestis* to impose a hierarchy of secretion

AUTHOR(S): Wulff-Strobel CR; Williams AW; Straley SC (REPRINT)

AUTHOR(S) E-MAIL: scstra01@pop.uky.edu

CORPORATE SOURCE: Univ Kentucky, Dept Microbiol & Immunol,  
/Lexington//KY/40536 (REPRINT); Univ Kentucky, Dept Microbiol &  
Immunol, /Lexington//KY/40536

PUBLICATION TYPE: JOURNAL

PUBLICATION: MOLECULAR MICROBIOLOGY, 2002, V43, N2 (JAN), P411-423

PUBLISHER: BLACKWELL SCIENCE LTD, P O BOX 88, OSNEY MEAD, OXFORD OX2 ONE,  
OXON, ENGLAND

ISSN: 0950-382X

LANGUAGE: English DOCUMENT TYPE: ARTICLE

ABSTRACT: LcrQ is a regulatory protein unique to *Yersinia*. Previous study in *Yersinia pseudotuberculosis* and *Yersinia enterocolitica* prompted the model in which LcrQ negatively regulates the expression of a set of virulence proteins called Yops, and its secretion upon activation of the Yop secretion (Ysc) type III secretion system permits full induction of Yops expression. In this study, we tested the hypothesis that LcrQ's effects on Yops expression might be indirect. Excess LcrQ was found to exert an inhibitory effect specifically at the level of Yops secretion, independent of production, and a normal inner Ysc gate protein LcrG was required for this activity. However, overexpression of LcrQ did not prevent YopH secretion, suggesting that LcrQ's effects at the Ysc discriminate among the Yops. We tested this idea by determining the effects of deletion or overexpression of LcrQ, YopH and their common chaperone SycH on early Yop secretion through the Ysc. Together, our findings indicated that LcrQ is not a negative regulator directly, but it acts in partnership with SycH at the Ysc gate to control the entry of a set of Ysc secretion substrates. A hierarchy of YopH secretion before YopE appears to be imposed by SycH in conjunction with both LcrQ and YopH. LcrQ and SycH in addition influenced the deployment of LcrV, a component of the Yops delivery mechanism. Accordingly, LcrQ appears to be a central player in determining the substrate specificity of the Ysc.

9/3,AB/14 (Item 2 from file: 440)

09/359426

DIALOG(R)File 440:Current Contents Search(R)  
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12618984 GENUINE ARTICLE#: 423CT NUMBER OF REFERENCES: 55  
TITLE: Protection against *Pseudomonas aeruginosa* chronic lung infection in mice by genetic immunization against outer membrane protein F (OprF) of *P-aeruginosa*  
AUTHOR(S): Price BM; Galloway DR (REPRINT); Baker NR; Gilleland LB; Staczek J; Gilleland HE  
AUTHOR(S) E-MAIL: galloway.3@osu.edu  
CORPORATE SOURCE: Ohio State Univ, Dept Microbiol, 484 W 12Th Ave/Columbus//OH/43210 (REPRINT); Ohio State Univ, Dept Microbiol, /Columbus//OH/43210; Louisiana State Univ, Dept Microbiol & Immunol, /Shreveport//LA/71130  
PUBLICATION TYPE: JOURNAL  
PUBLICATION: INFECTION AND IMMUNITY, 2001, V69, N5 (MAY), P3510-3515  
PUBLISHER: AMER SOC MICROBIOLOGY, 1752 N ST NW, WASHINGTON, DC 20036-2904 USA  
ISSN: 0019-9567

LANGUAGE: English DOCUMENT TYPE: ARTICLE

ABSTRACT: The *Pseudomonas aeruginosa*\*\*\* major constitutive outer membrane porin protein \*OprF\*\*\*, which has previously been shown to be a protective \*antigen\*\*\*, was targeted as a DNA vaccine candidate. The oprF gene was cloned into plasmid vector pVR1020, and the plasmid vaccines were delivered to mice by biolistic (gene gun) intradermal inoculation. Antibody titers in antisera from immunized mice were determined by enzyme linked immunosorbent assay, and the elicited antibodies were shown to be specifically reactive to OprF by immunoblotting. The immunoglobulin G (IgG) immune response was predominantly of the IgG1 isotype. Sera from DNA vaccine-immunized mice had significantly greater opsonic activity in opsonophagocytic assays than did sera from control mice. Following the initial immunization and two consecutive boosts, each at 2-week intervals, protection was demonstrated in a mouse model of chronic pulmonary infection by *P. aeruginosa*. Eight days postchallenge, both lungs were removed and examined. A significant reduction in the presence of severe macroscopic lesions, as well as in the number of bacteria present in the lungs, was seen. Based on these findings, genetic immunization with oprF has potential for development as a vaccine to protect humans against infection by *P. aeruginosa*.

9/3,AB/15 (Item 3 from file: 440)

DIALOG(R)File 440:Current Contents Search(R)  
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12069859 GENUINE ARTICLE#: 363RH NUMBER OF REFERENCES: 38  
TITLE: *Salmonella enteritidis* temperature-sensitive mutants protect mice against challenge with virulent *Salmonella* strains of different serotypes  
AUTHOR(S): Gherardi MM; Gomez MI; Garcia VE; Sordelli DO; Cerquetti MC (REPRINT)  
AUTHOR(S) E-MAIL: cerquetti@cotelcam.com.ar  
CORPORATE SOURCE: CONICET, Dept Microbiol Aplicada, Serrano 669/RA-1414 Buenos Aires/DF/Argentina/ (REPRINT); CONICET, Dept Microbiol Aplicada, /RA-1414 Buenos Aires/DF/Argentina/; UBA, Dept Microbiol Parasitol & Immunol, /Buenos Aires/DF/Argentina/  
PUBLICATION TYPE: JOURNAL

09/359426

PUBLICATION: FEMS IMMUNOLOGY AND MEDICAL MICROBIOLOGY, 2000, V29, N2 (OCT)  
, P81-88

PUBLISHER: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS

ISSN: 0928-8244

LANGUAGE: English DOCUMENT TYPE: ARTICLE

ABSTRACT: The protection conferred by temperature-sensitive mutants of *Salmonella enteritidis* against different wild-type *Salmonella* serotypes was investigated. Oral immunization with the single temperature-sensitive mutant E/1/3 or with a temperature-sensitive thymine-requiring double mutant (E/1/3T) conferred: (i) significant protection against the homologous wild-type *Salmonella* strains; (ii) significant cross-protection toward high challenge doses of *S. typhimurium*. Significant antibody levels against homologous lipopolysaccharide and against homologous and heterologous protein antigens were detected in sera from immunized mice. Moreover, a wide range of protein antigens from different *Salmonella* O serotypes were recognized by sera from immunized animals. Besides, primed lymphocytes from E/1/3 immunized mice recognized *Salmonella* antigens from different serotypes. Taken together, these results indicate that temperature-sensitive mutants of *S. enteritidis* are good candidates for the construction of live vaccines against *Salmonella*. (C) 2000 Federation of European Microbiological Societies. Published by Elsevier Science B.V. All rights reserved.

9/3,AB/16 (Item 4 from file: 440)

DIALOG(R) File 440:Current Contents Search(R)

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11546978 GENUINE ARTICLE#: 304RZ NUMBER OF REFERENCES: 21

TITLE: Functional expression in *Escherichia coli* and membrane topology of porin HopE, a member of a large family of conserved proteins in *Helicobacter pylori*

AUTHOR(S): Bina J; Bains M; Hancock REW (REPRINT)

AUTHOR(S) E-MAIL: bob@cmdr.ubc.ca

CORPORATE SOURCE: Univ British Columbia, Dept Microbiol & Immunol, 2222 Hlth Sci Mall/Vancouver/BC V6T 1Z3/Canada/ (REPRINT); Univ British Columbia, Dept Microbiol & Immunol, /Vancouver/BC V6T 1Z3/Canada/

PUBLICATION TYPE: JOURNAL

PUBLICATION: JOURNAL OF BACTERIOLOGY, 2000, V182, N9 (MAY), P2370-2375

PUBLISHER: AMER SOC MICROBIOLOGY, 1325 MASSACHUSETTS AVENUE, NW,

WASHINGTON, DC 20005-4171 USA

ISSN: 0021-9193

LANGUAGE: English DOCUMENT TYPE: ARTICLE

ABSTRACT: HopE is one of the smallest members of a family of 31 outer membrane proteins in *Helicobacter pylori* and has been shown to function as a porin. In this study it was cloned into *Escherichia coli* where it was expressed in the outer membrane, as confirmed by indirect immunofluorescence using HopE-specific antibodies. HopE purified from *E. coli* reconstituted channels in planar bilayer membranes that were the same size as those formed by HopE purified from *H. pylori*. A model of the membrane topology of HopE was constructed and indicated that this protein formed a beta-barrel with 16 transmembrane amphipathic beta-strands. The accuracy of this model was tested by Linker insertion mutagenesis, assuming that, like other porins, amino acid insertions were not tolerated in the transmembrane beta-strands but were tolerated in the adjoining loop regions. Generally, the results obtained with a series of 12 insertions of the sequence RSKDV and two substitutions

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were consistent with the topological model. The preponderance of amino acids that were conserved in the extended family of HopE paralogs were predicted to be within the membrane and comprised 45% of all residues in the membrane.

9/3,AB/17 (Item 5 from file: 440)  
DIALOG(R)File 440:Current Contents Search(R)  
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08594092 GENUINE ARTICLE#: XH496 NUMBER OF REFERENCES: 93  
TITLE: Transformation competence and type-4 pilus biogenesis in *Neisseria gonorrhoeae* - A review  
AUTHOR(S): Fussenegger M; Rudel T; Barten R; Ryll R; Meyer TF (REPRINT)  
CORPORATE SOURCE: MAX PLANCK INST BIOL, INFEKT BIOL ABT, SPEMANNSTR  
34/D-72076 TUBINGEN//GERMANY/ (REPRINT); MAX PLANCK INST BIOL, INFEKT  
BIOL ABT/D-72076 TUBINGEN//GERMANY//; ETH HONGGERBERG, SWISS FED INST  
TECHNOL, INST BIOTECHNOL/CH-8093 ZURICH//SWITZERLAND//; MAX PLANCK INST  
INFEKT BIOL, MOL BIOL ABT/D-10117 BERLIN//GERMANY/  
PUBLICATION TYPE: JOURNAL  
PUBLICATION: GENE, 1997, V192, N1 (JUN 11), P125-134  
PUBLISHER: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS  
ISSN: 0378-1119  
LANGUAGE: English DOCUMENT TYPE: ARTICLE

ABSTRACT: In *Neisseria gonorrhoea* (Ngo), the processes of type-4 pilus biogenesis and DNA transformation are functionally linked and play a pivotal role in the life style of this strictly human pathogen. The assembly of pili from its main subunit pilin (Pile) is a prerequisite for gonococcal infection since it allows the first contact to epithelial cells in conjunction with the pilus tip-associated PilC protein. While the components of the pilus and its assembly machinery are either directly or indirectly involved in the transport of DNA across the outer membrane, other factors unrelated to pilus biogenesis appear to facilitate further DNA transfer across the murein layer (ComL, Tpc) and the inner membrane (ComA) before the transforming DNA is rescued in the recipient bacterial chromosome in a RecA-dependent manner. Interestingly, Pile is essential for the first step of transformation, i.e., DNA uptake, and is itself also subject to transformation-mediated phase and antigenic variation. This short-term adaptive mechanism allows Ngo to cope with changing micro-environments in the host as well as to escape the immune response during the course of infection. Given the fact that Ngo has no ecological niche other than man, horizontal genetic exchange is essential for a successful co-evolution with the host. Horizontal exchange gives rise to heterogeneous populations harboring clones which better withstand selective forces within the host. Such extended horizontal exchange is reflected by a high genome plasticity, the existence of mosaic genes and a low linkage disequilibrium of genetic loci within the neisserial population. This led to the concept that rather than regarding individual *Neisseria* species as independent traits, they comprise a collective of species interconnected via horizontal exchange and relying on a common gene pool. (C) 1997 Elsevier Science B.V.

9/3,AB/18 (Item 6 from file: 440)  
DIALOG(R)File 440:Current Contents Search(R)  
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06872983 GENUINE ARTICLE#: TD038 NUMBER OF REFERENCES: 27

TITLE: IDENTIFICATION OF \*OUTER\*\*\* \*MEMBRANE\*\*\* \*PROTEINS\*\*\* AS TARGET  
\*ANTIGENS\*\*\* OF PSEUDOMONAS \*AERUGINOSA\*\*\* HOMMA SEROTYPE M

AUTHOR(S): YOKOTA S

CORPORATE SOURCE: SUMITOMO PHARMACEUT CO LTD, RES CTR, DISCOVERY RES LABS  
3, KONOYAMA KU, 1-98 KASUGADE NAKA 3 CHOME/OSAKA 554//JAPAN/ (Reprint)

PUBLICATION: CLINICAL AND DIAGNOSTIC LABORATORY IMMUNOLOGY, 1995, V2, N6 (NOV), P747-752

ISSN: 1071-412X

LANGUAGE: ENGLISH DOCUMENT TYPE: ARTICLE

ABSTRACT: Pseudomonas aeruginosa is routinely serotyped in Japan by using the Homma scheme. The serotypes (O serotypes) are based on the chemical structure of the O-polysaccharide portion of the lipopolysaccharide (LPS). However, the nature of the Homma serotype M antigen has remained obscure because strains classified as serotype M usually have the rough phenotype. I characterized the target antigen of serotype M. The results of Western blotting (immunoblotting) showed that commercially available typing monoclonal antibody (MAb) against serotype M specifically bound to outer membrane protein (Opr) G and that typing rabbit antiserum specific for serotype M mainly contained antibodies against Oprs F and H2. These Oprs were distributed among all P. aeruginosa strains tested, including the serotype standard, serotype M and nontypeable strains, and a series of LPS-core-defective mutants derived from strain PAC1. However, the rough mutants derived from strain PAC1 agglutinated with the anti-serotype M antibodies, whereas the smooth strains did not. LPS preparations from serotype M strains possessed few or no polysaccharide chains. These strains had higher levels of binding activity with anti-serotype M MAb, as well as with anti-lipid A MAb, which specifically bound to the cell surface of the rough-natured gram-negative bacterial strains with high activity. The anti-serotype M antiserum also contained rough-LPS specific antibodies, but the epitope was distributed among only a few strains. The results suggested that the Oprs acted as the serotype M antigen and that LPS did not. In conclusion, the rough strains agglutinated with anti-Opr antibodies and were distinguished as serotype M from the smooth strains of other serotypes, because the antibodies were accessible to the cell surface lacking O polysaccharides. I supposed that Homma serotype M is an index of the rough nature of P. aeruginosa strains rather than one of the O serotypes.

9/3,AB/19 (Item 7 from file: 440)

DIALOG(R) File 440:Current Contents Search(R)

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05771068 GENUINE ARTICLE#: PH251 NUMBER OF REFERENCES: 34

TITLE: DEVELOPMENT OF AN INTRAPERITONEAL IMPLANT CHAMBER FOR THE STUDY OF  
IN VIVO-GROWN PASTEURELLA HAEMOLYTICA IN CATTLE

AUTHOR(S): DAVIES RL; GIBBS HA; MCCLUSKEY J; COOTE JG; FREER JH; PARTON R

CORPORATE SOURCE: UNIV GLASGOW, DEPT MICROBIOL/GLASGOW G12 8QQ//SCOTLAND/  
(Reprint); UNIV GLASGOW, DEPT VET MED/GLASGOW G12 8QQ//SCOTLAND/

PUBLICATION: MICROBIAL PATHOGENESIS, 1994, V16, N6 (JUN), P423-433

ISSN: 0882-4010

LANGUAGE: ENGLISH DOCUMENT TYPE: ARTICLE

ABSTRACT: An intraperitoneal implant chamber was developed for the study of the in vivo growth of Pasteurella haemolytica in calves. The chamber had a volume of approximately 100 ml and featured an external sampling port which allowed multiple and sequential sampling of the chamber

contents. A single polycarbonate diffusion membrane with a pore size of 0.22  $\mu$ m allowed host peritoneal fluid to diffuse into the chamber and maintained the bacterial population free of white blood cells. Chambers were implanted into the peritoneal cavities of four five-month-old dairy-cross calves, demonstrated to be sero-negative by indirect haemagglutination assay. Three days later, four different *P. haemolytica* isolates, of serotypes A1 or A2, were inoculated into the chambers. In all cases, there was a slow decline in the viable bacterial numbers within the chambers. Western blot analysis of the antibody content of the chamber fluids revealed IgG antibodies to *P. haemolytica* OMPs in the fluid prior to inoculation and both 9 and 15 days after inoculation. Furthermore, there was no significant change in the IgG antibody content of the chamber fluid, either quantitatively or qualitatively, during the course of the experiment. Analysis of the bactericidal activity of pre-inoculation chamber fluid against the corresponding bacterial isolate suggested that an antibody-dependent complement-mediated process was not responsible for the decline in bacterial numbers. Overall, the chamber design was demonstrated to be extremely effective for in vivo studies of *P. haemolytica* in calves, allowing easy and regular sampling of the chamber contents and maintaining bacteria free of white blood cells. Although there was a slow decline in bacterial numbers over time, sufficient numbers of cells could be obtained for analysis of cell-surface antigens.

9/3,AB/20 (Item 8 from file: 440)  
 DIALOG(R) File 440:Current Contents Search(R)  
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05014934 GENUINE ARTICLE#: MH040 NUMBER OF REFERENCES: 24  
 TITLE: CONSERVATION OF SURFACE EPITOPES IN *PSEUDOMONAS AERUGINOSA* OUTER MEMBRANE PORIN PROTEIN OPRF  
 AUTHOR(S): MARTIN NL; RAWLING EG; WONG RSY; ROSOK M; HANCOCK REW (Reprint)  
 CORPORATE SOURCE: UNIV BRITISH COLUMBIA, DEPT MICROBIOL/VANCOUVER V6T 1Z3/BC/CANADA/ (Reprint); UNIV BRITISH COLUMBIA, DEPT MICROBIOL/VANCOUVER V6T 1Z3/BC/CANADA/; BRISTOL MYERS SQUIBB, DIV PHARMACEUT RES/SEATTLE//WA/00000  
 PUBLICATION: FEMS MICROBIOLOGY LETTERS, 1993, V113, N3 (NOV 1), P261-266  
 ISSN: 0378-1097  
 LANGUAGE: ENGLISH DOCUMENT TYPE: ARTICLE  
 ABSTRACT: The outer membrane proteins of several prominent bacterial pathogens demonstrate substantial variation in their surface \*antigenic\*\*\* epitopes. To determine if this was also true for *Pseudomonas aeruginosa*\*\*\* \*outer\*\*\* \*membrane\*\*\* \*protein\*\*\* \*OprF\*\*\*, gene sequencing of a serotype 5 isolate was performed to permit comparison with the published serotype 12 oprF gene sequence. Only 16 nucleotide substitutions in the 1053 nucleotide coding region were observed; none of these changed the amino acid sequence. A panel of 10 monoclonal antibodies (mAbs) reacted with each of 46 *P. aeruginosa* strains representing all 17 serotype strains, 12 clinical isolates, 15 environmental isolates and 2 laboratory isolates. Between two and eight of these mAbs also reacted with proteins from representatives of the rRNA homology group I of the Pseudomonadaceae. Nine of the ten mAbs recognized surface antigenic epitopes as determined by indirect immunofluorescence techniques and their ability to opsonize *P. aeruginosa* for phagocytosis. These epitopes were partially masked by lipopolysaccharide side chains as revealed using a side chain-deficient mutant. It is concluded that OprF is a highly conserved protein with

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several conserved surface antigenic epitopes.

9/3,AB/21 (Item 9 from file: 440)  
DIALOG(R)File 440:Current Contents Search(R)  
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04530208 GENUINE ARTICLE#: KZ976 NUMBER OF REFERENCES: 19  
TITLE: SEROLOGIC TESTS FOR PSEUDOMONAS-AERUGINOSA - CONTRIBUTION TO THE  
DIFFERENTIATION OF COLONIZATION AND INFECTION IN CYSTIC FIBROSIS  
PATIENTS  
AUTHOR(S): RECULE C; CROIZE J; COPPERE C; HIRTZ P; GOUT JP; LENOC P  
CORPORATE SOURCE: CHR UNIV GRENOBLE, BACTERIOL LAB, BP  
217X/F-38043 GRENOBLE//FRANCE/ (Reprint); CTR HOSP REG UNIV, BIOCHIM LAB  
A/F-38043 GRENOBLE//FRANCE/; HOP GEN VOIRON/F-38056 VOIRON//FRANCE/  
PUBLICATION: PATHOLOGIE BIOLOGIE, 1993, V41, N3 (MAR), P249-254  
ISSN: 0369-8114  
LANGUAGE: FRENCH DOCUMENT TYPE: ARTICLE  
ABSTRACT: Serologic test for Pseudomonas aeruginosa have been found useful  
for differentiating colonization from infection, especially in chronic  
disease. A Western blot method was compared with the ELISA used  
routinely. The Western blot detected serum IgGs against P.  
\*aeruginosa\*\*\* \*outer\*\*\* \*membrane\*\*\* \*proteins\*\*\*, whereas the ELISA  
reacted with IgGs against soluble P. \*aeruginosa\*\*\* \*antigens\*\*\*. Among  
the 103 sera from 58 cystic fibrosis patients studied, all those with  
ELISA reactivity were positive by Western blot. The antibody response  
was detected earlier by Western blot than by ELISA, suggesting that the  
former technique may be useful for the early diagnosis of infection.

9/3,AB/22 (Item 10 from file: 440)  
DIALOG(R)File 440:Current Contents Search(R)  
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04431028 GENUINE ARTICLE#: KU824 NUMBER OF REFERENCES: 46  
TITLE: LIPOPOLYSACCHARIDE-INDEPENDENT RADIOIMMUNOPRECIPITATION AND  
IDENTIFICATION OF STRUCTURAL AND INVIVO INDUCED IMMUNOGENIC SURFACE  
PROTEINS OF SALMONELLA-TYPHI IN TYPHOID FEVER  
AUTHOR(S): ARON L; FAUNDEZ G; GONZALEZ C; ROESSLER E; CABELLO F (Reprint)  
CORPORATE SOURCE: NEW YORK MED COLL, DEPT MICROBIOL &  
IMMUNOL/VALHALLA//NY/10595 (Reprint); NEW YORK MED COLL, DEPT MICROBIOL  
& IMMUNOL/VALHALLA//NY/10595; UNIV CHILE, SCH MED, DEPT  
MED/SANTIAGO//CHILE/  
PUBLICATION: VACCINE, 1993, V11, N1, P10-17  
ISSN: 0264-410X  
LANGUAGE: ENGLISH DOCUMENT TYPE: ARTICLE  
ABSTRACT: The humoral response to Salmonella typhi is important for  
protective immunity against typhoid fever, as indicated by the  
protection obtained with killed cell vaccines and component vaccines  
(outer membrane proteins, Vi antigen) in animals and human beings.  
Nonetheless, analysis and interpretation of host humoral immune  
response to S. typhi surface antigens have been difficult because of  
the complex structure of the S. typhi envelope and the lack of purified  
reagents for detection of immune response to individual surface  
components. Normal and convalescent human sera from typhoid fever  
patients were absorbed with S. typhi lipopolysaccharide. These sera  
were used in radioimmunoprecipitation assays of whole S. typhi cells  
and S. typhi membranes labelled with either I-125 or S-35-methionine.

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This strategy has permitted the unequivocal identification of a humoral immune response to structural and in vivo induced outer membrane proteins of *S. typhi*. In this manner, we have identified the porins, lipoprotein, the iron-starvation-induced proteins, and three proteins of 30, 18.5 and 15 kDa as surface-exposed immunogens of *S. typhi* in patients with typhoid fever. These studies suggest that further experimental work is needed to characterize the relevance of both anti-*S. typhi* outer membrane protein and anti-lipopolysaccharide antibodies in recovery from *S. typhi* infections and protective immunity.

9/3,AB/23 (Item 11 from file: 440)  
DIALOG(R)File 440:Current Contents Search(R)  
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04129815 GENUINE ARTICLE#: JY830 NUMBER OF REFERENCES: 36  
TITLE: MODULATION OF SURFACE ANTIGEN EXPRESSION BY KLEBSIELLA-PNEUMONIAE IN  
RESPONSE TO GROWTH ENVIRONMENT  
AUTHOR(S): CAMPRUBI S; SMITH MA; TOMAS JM; WILLIAMS P (Reprint)  
CORPORATE SOURCE: UNIV NOTTINGHAM,DEPT PHARMACEUT SCI/NOTTINGHAM NG7  
2RD//ENGLAND/ (Reprint); UNIV NOTTINGHAM,DEPT PHARMACEUT SCI/NOTTINGHAM  
NG7 2RD//ENGLAND/; UNIV BARCELONA,FAC BIOL,DEPT MICROBIOL/BARCELONA  
7//SPAIN/  
PUBLICATION: MICROBIAL PATHOGENESIS, 1992, V13, N2 (AUG), P145-155  
ISSN: 0882-4010  
LANGUAGE: ENGLISH DOCUMENT TYPE: ARTICLE

9/3,AB/24 (Item 12 from file: 440)  
DIALOG(R)File 440:Current Contents Search(R)  
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03807265 GENUINE ARTICLE#: JB247 NUMBER OF REFERENCES: 34  
TITLE: LEGIONELLA-PNEUMOPHILA LIPOPOLYSACCHARIDE ACTIVATES THE CLASSICAL  
COMPLEMENT PATHWAY  
AUTHOR(S): MINTZ CS; SCHULTZ DR; ARNOLD PI; JOHNSON W  
CORPORATE SOURCE: UNIV MIAMI,SCH MED,DEPT MICROBIOL &  
IMMUNOL/MIAMI//FL/33101 (Reprint); UNIV MIAMI,SCH MED,DEPT  
MED/MIAMI//FL/33101; UNIV IOWA,DEPT MICROBIOL/IOWA CITY//IA/52242  
PUBLICATION: INFECTION AND IMMUNITY, 1992, V60, N7 (JUL), P2769-2776  
LANGUAGE: ENGLISH DOCUMENT TYPE: ARTICLE

ABSTRACT: Legionella pneumophila is a gram-negative bacterium capable of entering and growing in alveolar macrophages and monocytes. Complement and complement receptors are important in the uptake of *L. pneumophila* by human mononuclear phagocytes. The surface molecules of *L. pneumophila* that activate the complement system are unknown. To identify these factors, we investigated the effects of *L. pneumophila* lipopolysaccharide (LPS) on the classical and alternative complement pathways of normal human serum by functional hemolytic assays. Although incubation of LPS in normal human serum at 37-degrees-C resulted in the activation of both pathways, complement activation proceeded primarily through the classical pathway. Activation of the classical pathway by LPS was dependent on natural antibodies of the immunoglobulin M class that were present in various quantities in sera from different normal individuals but were absent in an immunoglobulin-deficient serum obtained from an agammaglobulinemic patient. Additional studies using sheep erythrocytes coated with LPS suggested that the antibodies

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recognized antigenic sites in the carbohydrate portion of LPS. The ability of LPS to interact with the complement system suggests a role for LPS in the uptake of *L. pneumophila* by mononuclear phagocytes.

9/3,AB/25 (Item 13 from file: 440)  
DIALOG(R)File 440:Current Contents Search(R)  
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02994782 GENUINE ARTICLE#: FY558 NUMBER OF REFERENCES: 70  
TITLE: THE APPLICATION OF 2-DIMENSIONAL POLYACRYLAMIDE GEL ELECTROPHORESIS  
TO MEDICAL MICROBIOLOGY - MOLECULAR EPIDEMIOLOGY OF VIRUSES AND  
BACTERIA

AUTHOR(S): CASH P

CORPORATE SOURCE: UNIV ABERDEEN, DEPT MED MICROBIOL, FORESTERHILL/ABERDEEN  
AB9 2ZD//SCOTLAND/ (Reprint)

PUBLICATION: ELECTROPHORESIS, 1991, V12, N7-8 (JUL-AUG), P592-604

LANGUAGE: ENGLISH DOCUMENT TYPE: ARTICLE

ABSTRACT: A variety of molecular methods can be used to identify protein and nucleic acid markers with which to investigate the epidemiology of viruses and bacteria. This paper reviews the application of two-dimensional polyacrylamide gel electrophoresis (2-D PAGE) for studying microbial molecular epidemiology. A small format 2-D PAGE system is described for locating protein markers in group B coxsackie viruses (CVB) and Haemophilus influenzae isolates. Representative isolates of CVB serotypes 2, 4, and 5 were compared by analysing the intracellular proteins present in CVB-infected HEp-2 cells by 2-D PAGE protein gels. Although some of the virus-induced proteins had similar electrophoretic mobilities, the three serotypes could be distinguished from each other on the basis of a major virus-induced protein of molecular weight between 39 000 and 43 000. Protein differences were demonstrated among six serotype 2 CVB (CVB-2) isolates. Four clinical CVB-2 isolates collected over a period of four months had indistinguishable two-dimensional protein profiles. Comparison of the two-dimensional protein profiles of cloned virus stocks prepared from a single clinical CVB isolate demonstrated that it was a heterogeneous virus population. The proteins of nontypable and type-b *H. influenzae* isolates were compared. Up to 160 proteins, detected by staining with Coomassie Brilliant Blue R, were resolved by 2-D PAGE. Although protein differences between individual bacterial isolates were detected, comparable two-dimensional protein profiles were found for the two groups of *H. influenzae* isolates. There was no similarity in the two-dimensional protein profiles of *H. influenzae* and *Aeromonas*. Potential protein markers were identified that may be useful in long-term studies of *H. influenzae* epidemiology.

9/3,AB/26 (Item 14 from file: 440)  
DIALOG(R)File 440:Current Contents Search(R)  
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02706384 GENUINE ARTICLE#: FC700 NUMBER OF REFERENCES: 83  
TITLE: IRON AND BACTERIAL VIRULENCE - A BRIEF OVERVIEW  
AUTHOR(S): GRIFFITHS E  
CORPORATE SOURCE: NATL INST BIOL STAND & CONTROLS/POTTERS  
BAR/HERTS/ENGLAND/ (Reprint)  
PUBLICATION: BIOLOGY OF METALS, 1991, V4, N1, P7-13  
LANGUAGE: ENGLISH DOCUMENT TYPE: ARTICLE

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9/3,AB/27 (Item 15 from file: 440)  
DIALOG(R)File 440:Current Contents Search(R)  
(c) 2002 Inst for Sci Info. All rts. reserv.

02662887 GENUINE ARTICLE#: FB458 NUMBER OF REFERENCES: 31  
TITLE: DERMAL AND SEROLOGICAL RESPONSE AGAINST PSEUDOMONAS-AERUGINOSA IN  
SHEEP BRED FOR RESISTANCE AND SUSCEPTIBILITY TO FLEECE-ROT  
AUTHOR(S): CHIN JC; WATTS JE  
CORPORATE SOURCE: ELIZABETH MACARTHUR AGR INST, PMB 8/CAMDEN/NSW  
2570/AUSTRALIA/ (Reprint)  
PUBLICATION: AUSTRALIAN VETERINARY JOURNAL, 1991, V68, N1 (JAN), P28-31  
LANGUAGE: ENGLISH DOCUMENT TYPE: ARTICLE  
ABSTRACT: Genetically select lines of Merino sheep have been bred at  
Trangie (NSW Agriculture and Fisheries) for resistance (R) or  
susceptibility (S) to fleece-rot and flystrike. It is believed that  
fleece characters are primarily responsible for the R or S phenotype.  
When transferred to the wetter coastal environment of Sydney, R and S  
sheep with no more than 6 weeks wool cover, continued to show  
significant differences in the incidence and severity of fleece-rot  
dermatitis. To test the hypothesis that these sheep might also exhibit  
differences in their local skin reactions and immune responsiveness, 3  
intradermal injections of killed *Pseudomonas aeruginosa* were  
administered at monthly intervals. After primary intradermal  
challenge, R sheep had a higher incidence of skin induration and a  
stronger inflammatory response (increased induration diameter) than S  
sheep. Compared to S sheep, R sheep also developed higher levels of  
circulating antibodies against whole cell \*antigen\*\*\* and both inner  
and \*outer\*\*\* \*membrane\*\*\* \*proteins\*\*\* of *P. aeruginosa*\*\*\*. These  
responses were maintained in R sheep with each consecutive challenge  
while S sheep showed a decline in their immune responsiveness.  
Differences in antibody response against outer membrane proteins were  
also detected when antigenically naive sheep from each genetic line  
were sensitised by epicutaneous challenge with *P. aeruginosa* under  
experimental wetting conditions. Intradermal challenge of these  
animals 6 months later with outer membrane proteins, revealed a late  
maximum (72 h) in the development of induration diameters for R sheep  
while S animals showed maximal induration diameters by 24 h. However,  
there was no significant difference in induration response between 24 h  
and 72 h within each group of sheep. These differences were  
accompanied by significantly higher antibody titres against outer  
membrane proteins in R than S sheep. It is concluded that R and S  
sheep differ in their dermal and immune responsiveness, and that this  
difference may reside in the way the skin processes or responds to  
environmental antigens produced by the opportunistic and major  
fleece-rot predisposing skin bacteria, *P. aeruginosa*.

9/3,AB/28 (Item 1 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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00392028  
Human monoclonal antibody, and its production and use.  
Menschlicher monoklonaler Antikörper, seine Herstellung und seine  
Verwendung.  
Anticorps monoclonal humain et sa production et utilisation.

Searcher : Shears 308-4994

09/359426

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PATENT (CC, No, Kind, Date): EP 394946 A2 901031 (Basic)

EP 394946 A3 910123

APPLICATION (CC, No, Date): EP 90107717 900424;

PRIORITY (CC, No, Date): JP 89104849 890424

DESIGNATED STATES: AT; BE; CH; DE; DK; FR; GB; IT; LI; NL; SE

INTERNATIONAL PATENT CLASS: C12P-021/08; A61K-039/395; G01N-033/577;  
C12N-005/12;

ABSTRACT EP 394946 A2

A human monoclonal antibody, which has prophylactic and therapeutic  
effect to infectious diseases caused by Pseudomonas aeruginosa of  
serotypes A and H classified under the Japanese Committee's  
Classification, and the epitope of which is located at the common  
structure in the O-antigen of Pseudomonas aeruginosa of serotypes A and  
H. A hybridoma producing said human monoclonal antibody, and processes  
for preparing said hybridoma and antibody are also provided.

ABSTRACT WORD COUNT: 72

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	247
SPEC A	(English)	EPABF1	6907
Total word count - document A			7154
Total word count - document B			0
Total word count - documents A + B			7154

9/3,AB/29 (Item 2 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00386865

Human monoclonal antibody to pseudomonas Aeruginosa, and its production and  
use.

Menschlicher monoklonaler Antikörper gegen Pseudomonas Aeruginosa,  
Herstellung und Verwendung.

Anticorps monoclonal humain contre Pseudomonas Aeruginosa, sa production et  
l'utilisation.

Searcher : Shears 308-4994

09/359426

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LEGAL REPRESENTATIVE:

Kolb, Helga, Dr. Dipl.-Chem. et al (49371), Hoffmann, Eitle & Partner,  
Patentanwalte, Postfach 81 04 20, D-81904 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 383090 A1 900822 (Basic)

APPLICATION (CC, No, Date): EP 90101804 900130;

PRIORITY (CC, No, Date): JP 8922245 890130; JP 89271034 891017

DESIGNATED STATES: AT; BE; CH; DE; FR; GB; IT; LI; NL; SE.

INTERNATIONAL PATENT CLASS: C12P-021/00; C12N-005/00; A61K-039/40;

ABSTRACT EP 383090 A1

A human monoclonal antibody showing a specific binding property to  
flagella of Pseudomonas aeruginosa, characterized in that said antibody  
produces a therapeutic effect on the mouse experimental infection caused  
by Pseudomonas aeruginosa at a dose of not less than 5 (mu)g/kg of body  
weight.

ABSTRACT WORD COUNT: 48

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	248
SPEC A	(English)	EPABF1	8423
Total word count - document A			8671
Total word count - document B			0
Total word count - documents A + B			8671

9/3,AB/30 (Item 3 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

(c) 2002 European Patent Office. All rts. reserv.

00342586

Human monoclonal antibody, hybridoma producing the same and pharmaceutical.  
Menschlicher monoklonaler Antikörper, Hybridoma, das ihn herstellt, und  
pharmazeutisches Mittel.

Anticorps monoclonal humain, hybridome le produisant et produit  
pharmaceutique.

PATENT ASSIGNEE:

SUMITOMO PHARMACEUTICALS COMPANY, LIMITED, (653533), 2-8, Dosho-machi  
2-Chome, Chuo-ku, Osaka-shi Osaka-fu, (JP), (applicant designated  
states: DE;NL;SE)

INVENTOR:

Yokota, Shinichi, 2-14-7, Mefu, Takarazuka-shi Hyogo-ken, (JP)

Searcher : Shears 308-4994



09/359426

Ohtsuka, Hiroshi, 16-40-601, Takagihigashi-machi Nishinomiya-shi,  
Hyogo-ken, (JP)  
Ochi, Hiroshi, 2-11-8-110, Sonehigashi-machi Toyonaka-shi, Osaka-fu, (JP)  
Noguchi, Hiroshi, 4-4-153, Seiwadainishi Kawanishi-shi, Hyogo-ken, (JP)  
Terashima, Masazumi, 2-29-7, Oike Ibaraki-shi, Osaka-fu, (JP)  
Kato, Masuhiro, 2-10-2-235, Sonehigashi-machi Toyonaka-shi, Osaka-fu,  
(JP)

LEGAL REPRESENTATIVE:

Hansen, Bernd, Dr.rer.nat. et al (4922), Hoffmann, Eitle & Partner  
Patentanwalte Postfach 81 04 20, D-81904 Munchen, (DE)  
PATENT (CC, No, Kind, Date): EP 341684 A2 891115 (Basic)  
EP 341684 A3 900117  
EP 341684 B1 950118

APPLICATION (CC, No, Date): EP 89108383 890510;

PRIORITY (CC, No, Date): JP 88114473 880510

DESIGNATED STATES: DE; NL; SE

INTERNATIONAL PATENT CLASS: C12P-021/00; A61K-039/40; C12N-015/00;

ABSTRACT EP 341684 A2

A human monoclonal antibody, which has prophylactic and therapeutic effect to infections diseases caused by Pseudomonas aeruginosa, and the epitope of which is located in the outer core moiety of LPS of said microorganism. A hybridoma producing the human monoclonal antibody, and processes for preparing said antibody and hybridoma are also provided.

ABSTRACT WORD COUNT: 56

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPBBF2	276
CLAIMS B	(English)	EPBBF2	248
CLAIMS B	(German)	EPBBF2	245
CLAIMS B	(French)	EPBBF2	260
SPEC A	(English)	EPBBF2	7961
SPEC B	(English)	EPBBF2	7952
Total word count - document A			8237
Total word count - document B			8705
Total word count - documents A + B			16942

9/3,AB/31 (Item 4 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
(c) 2002 European Patent Office. All rts. reserv.

00327638

HUMAN MONOCLONAL ANTIBODY AND DRUG FOR PROPHYLAXIS AND TREATMENT OF  
INFECTIOUS DISEASES COMPRISING SAME AS EFFECTIVE INGREDIENT.

MENSCHLICHER MONOKLONALER ANTIKORPER UND ARZNEIMITTEL ZUR PROPHYLAXE UND  
BEHANDLUNG VON INFEKTIOSEN KRANKHEITEN.

ANTICORPS MONOCLONAL HUMAIN ET MEDICAMENT POUR LA PROPHYLAXIE ET LE  
TRAITEMENT DE MALADIES INFECTIEUSES COMPRENANT LEDIT ANTICORPS EN TANT  
QU'INGREDIENT EFFICAC

PATENT ASSIGNEE:

MITSUI TOATSU CHEMICALS, Inc., (204170), 2-5 Kasumigaseki 3-chome,  
Chiyoda-Ku Tokyo 100, (JP), (applicant designated states:  
CH;DE;FR;GB;IT;LI;NL;SE)

INVENTOR:

FUKUDA, Tamotsu, 2142, Togo, Mobara-shi, Chiba-ken 297, (JP)

Searcher : Shears 308-4994

09/359426

ONO, Yasushi, 13-4, Honcho 2-chome, Shiki-shi, Saitama-ken 353, (JP)  
SHIGETA, Shiro, 147-28, Omori-aza-kubouchi, Fukushima-shi, Fukushima-ken  
960-11, (JP)

KUROIWA, Yasuyuki, 2100, Togo, Mobara-shi, Chiba-ken 297, (JP)

OOKA, Hisayoshi, 2142, Togo, Mobara-shi, Chiba-ken 297, (JP)

LEGAL REPRESENTATIVE:

Thomsen, Dieter, Dr. (11923), Postbox 70 19 29, W-8000 Munchen 70, (DE)

PATENT (CC, No, Kind, Date): EP 327648 A1 890816 (Basic)

EP 327648 B1 930609

WO 8804669 880630

APPLICATION (CC, No, Date): EP 88900105 871214; WO 87JP976 871214

PRIORITY (CC, No, Date): JP 86296594 861215

DESIGNATED STATES: CH; DE; FR; GB; IT; LI; NL; SE

INTERNATIONAL PATENT CLASS: C07K-015/04; C12N-005/00; C12N-015/00;

C12P-021/00; A61K-039/104; G01N-033/569; G01N-033/577;

LANGUAGE (Publication,Procedural,Application): English; English; Japanese

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
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CLAIMS B	(English)	EPBBF1	310
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CLAIMS B	(German)	EPBBF1	339
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CLAIMS B	(French)	EPBBF1	365
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SPEC B	(English)	EPBBF1	11819
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Total word count - document A	0
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Total word count - document B	12833
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Total word count - documents A + B	12833
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9/3,AB/32 (Item 5 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

(c) 2002 European Patent Office. All rts. reserv.

00305164

Immunological adjuvant and process for preparing the same, pharmaceutical compositions, and a kit of parts.

Immunologisches Adjuvans und Verfahren zu seiner Herstellung, pharmazeutische Zubereitungen und Besteck.

Adjuvant immunologique et procede pour le preparer, compositions pharmaceutiques et trousse.

PATENT ASSIGNEE:

Berger, Frank M., (1053470), 515 East 72nd Street, Suite 30E, New York  
New York 10021, (US), (applicant designated states:

AT;BE;CH;DE;FR;GB;IT;LI;LU;NL;SE)

INVENTOR:

Berger, Frank M., 515 East 72nd Street Suite 30E, New York, NY 10021,  
(US)

Lechevalier, Mary P., 28 Juniper Lane, Piscataway, NJ 08854, (US)

Bona, Constantin, 406 East 73rd Street, New York, NY 10021, (US)

LEGAL REPRESENTATIVE:

Weinhold, Peter, Dr. et al (12856), Patentanwalte Dr. V. Schmied-Kowarzik

Dipl.-Ing. G. Dannenberg Dr. P. Weinhold Dr. D. Gudel Dipl.-Ing. S.

Schubert Dr. P. Barz Siegfriedstrasse 8, D-8000 Munchen 40, (DE)

PATENT (CC, No, Kind, Date): EP 375808 A1 900704 (Basic)

APPLICATION (CC, No, Date): EP 88121909 881230;

PRIORITY (CC, No, Date): EP 88121909 881230

DESIGNATED STATES: AT; BE; CH; DE; FR; GB; IT; LI; LU; NL; SE

INTERNATIONAL PATENT CLASS: A61K-039/39; A61K-035/74;

ABSTRACT EP 375808 A1

09/359426

A process is provided for preparing immunological adjuvant (which are unusual in that they do not contain mycolic acids, mycolic acid esters or lipopolysaccharides, and can increase the immune response in animals of soluble and particulate antigens without the presence of oil or oily vehicles, and without inducing adjuvant arthritis or other undesirable side effects) by solvent extraction from a species of Amycolata, a genus of filamentous branching bacteria known as Actinomycetes as well as pharmaceutical compositions containing such adjuvants, and a kit of parts comprising such adjuvants and an antigen.

ABSTRACT WORD COUNT: 95

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	252
SPEC A	(English)	EPABF1	7760
Total word count - document A			8012
Total word count - document B			0
Total word count - documents A + B			8012

9/3,AB/33 (Item 6 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

(c) 2002 European Patent Office. All rts. reserv.

00232506

E87Ag ANTIGEN OF PSEUDOMONAS AERUGINOSA, MONOCLONAL ANTIBODY AGAINST IT, AND HYBRIDOMA.

E87AG-ANTIGEN DES PSEUDOMONAS AERUGINOSA, MONOKLONALE ANTIKORPER DAGEGEN UND HYBRIDOM.

ANTIGENE E87Ag DU PSEUDOMONAS AERUGINOSE, ANTICORPS MONOCLONAL CONTRE CET ANTIGENE ET HYBRIDOME.

PATENT ASSIGNEE:

TEIJIN LIMITED, (212523), 11 Minamihonmachi 1-chome Higashi-ku, Osaka-shi Osaka 541, (JP), (applicant designated states:

AT;BE;CH;DE;FR;GB;IT;LI;NL;SE)

INVENTOR:

SAWADA, Shuzo 15-6, Tamadaira 5-chome, Hino-shi, Tokyo 191, (JP)

KAWAMURA, Takashi 22-17, Tamadaira 3-chome, Hino-shi, Tokyo 191, (JP)

MASUHO, Yasuhiko 20-2, Tamadaira 5-chome, Hino-shi, Tokyo 191, (JP)

TOMIBE, Katsuhiko 17-3, Kamiigusa 1-chome, Suginami-ku, Tokyo 167, (JP)

LEGAL REPRESENTATIVE:

Votier, Sidney David et al (37081), CARPMAELS & RANSFORD 43, Bloomsbury Square, London WC1A 2RA, (GB)

PATENT (CC, No, Kind, Date): EP 215131 A1 870325 (Basic)

EP 215131 A1 870916

EP 215131 B1 920617

WO 8605396 860925

APPLICATION (CC, No, Date): EP 86902010 860310; WO 86JP124 860310

PRIORITY (CC, No, Date): JP 8546445 850311; JP 8546446 850311

DESIGNATED STATES: AT; BE; CH; DE; FR; GB; IT; LI; NL; SE

INTERNATIONAL PATENT CLASS: A61K-039/104; A61K-039/40; C07K-015/04;

C12N-005/00; C12N-015/00; C12P-021/00; G01N-033/569; G01N-033/577;

ABSTRACT EP 215131 A1

E87Ag ANTIGEN OF PSEUDOMONAS AERUGINOSA, MONOCLONAL ANTIBODY AGAINST IT, AND HYBRIDOMA.

E87Ag antigen of Pseudomonas aeruginosa contained in

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lipopolysaccharides of Pseudomonas aeruginosa and comprising a polysaccharide portion mainly composed of neutral sugar units and having a molecular weight of about 27,000, human or mouse monoclonal antibody which can recognize said antigen, and mouse-man or mouse-mouse hybridoma producing said monoclonal antibody. The monoclonal antibody can be used for diagnosis and treatment of infectious diseases caused by Pseudomonas aeruginosa.

ABSTRACT WORD COUNT: 79

LANGUAGE (Publication,Procedural,Application): English; English; Japanese  
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	310
CLAIMS B	(German)	EPBBF1	332
CLAIMS B	(French)	EPBBF1	378
SPEC B	(English)	EPBBF1	5806
Total word count - document A			0
Total word count - document B			6826
Total word count - documents A + B			6826

9/3,AB/34 (Item 7 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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00231037

HYBRIDOMAS PRODUCING ANTI-PSEUDOMONAS AERUGINOSA HUMAN MONOCLONAL ANTIBODY.  
HUMANER MONOKLONALER ANTIKORPER GEGEN PSEUDOMONAS AERUGINOSAGEGEN  
PSEUDOMONAS AERUGINOSA PRODUZIERENDE HYBRIDOMEN.  
HYBRIDOMES PRODUISANT ANTI-PSEUDOMONAS AERUGINOSA HUMAN MONOCLONAL  
ANTIBODY.

PATENT ASSIGNEE:

TEIJIN LIMITED, (212523), 11 Minamihonmachi 1-chome Higashi-ku, Osaka-shi  
Osaka 541, (JP), (applicant designated states:  
AT;BE;CH;DE;FR;GB;IT;LI;NL;SE)

INVENTOR:

SAWADA, Shuzo, 15-6, Tamadaira 5-chome, Hino-shi Tokyo 191, (JP)  
KAWAMURA, Takashi, Tama House No. 1 Tamadaira 3-chome, Hino-shi Tokyo 191  
, (JP)  
MASUHO, Yasuhiko, 20-2, Tamadaira 5-chome, Hino-shi Tokyo 191, (JP)  
TOMIBE, Katsuhiko, 17-3, Kaiigusa 1-chome, Sugunami-ku Tokyo 167, (JP)

LEGAL REPRESENTATIVE:

Votier, Sidney David et al (37081), CARPMAELS & RANSFORD 43, Bloomsbury  
Square, London WC1A 2RA, (GB)

PATENT (CC, No, Kind, Date): EP 233289 A1 870826 (Basic)  
EP 233289 B1 930310  
WO 8603754 860703

APPLICATION (CC, No, Date): EP 86900258 851220; WO 85JP698 851220

PRIORITY (CC, No, Date): JP 84273155 841226; JP 84273156 841226; JP  
84274659 841228

DESIGNATED STATES: AT; BE; CH; DE; FR; GB; IT; LI; NL; SE

INTERNATIONAL PATENT CLASS: C07K-015/00; C12P-021/00; C12N-005/00;  
C12N-015/00; A61K-039/40; C12P-021/00; C12R-001/91

NOTE:

No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
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09/359426

CLAIMS B	(English)	EPBBF1	312
CLAIMS B	(German)	EPBBF1	298
CLAIMS B	(French)	EPBBF1	364
SPEC B	(English)	EPBBF1	4131
Total word count - document A			0
Total word count - document B			5105
Total word count - documents A + B			5105

9/3,AB/35 (Item 1 from file: 357)  
DIALOG(R)File 357:Derwent Biotechnology Abs  
(c) 2002 Derwent Publ Ltd. All rts. reserv.

0259138 DBA Accession No.: 2000-13628

Immunogenic efficacy of differently produced recombinant vaccines  
candidates against *Pseudomonas aeruginosa* infections - involving outer  
membrane proteins

AUTHOR: von Specht B U; Gabelsberger J; Knapp B; Hundt E;  
Schmidt-Pilger H; Bauernsachs S; Lenz U; Domdey H

CORPORATE AFFILIATE: Univ.Freiburg

Univ.Munich-Ludwig-Maximilians-Inst.Biochem.Genet. Chiron-Behring

CORPORATE SOURCE: Chirurgische Universitätsklinik der Universität Freiburg,  
Chirurgische Forschung, Hugstetter Strasse 55, 79106 Freiburg, Germany.  
email:specht@ch11.ukl.uni-freiburg.de

JOURNAL: J.Biotechnol. (83, 1-2, 3-12) 2000

ISSN: 0168-1656 CODEN: JBITD4

LANGUAGE: English

ABSTRACT: Three different variants of the recombinant hybrid outer membrane  
protein OprF-OprI could be obtained in high yield after expression in  
*Escherichia coli*. The hybrid protein was modified N terminally, either  
with a minimal histidine tag or with a homologous sequence of OprF.  
Both recombinant proteins were purified by nickel chelate affinity  
chromatography under native and denaturing conditions, and this  
produced three suitable candidates for a vaccination trial, protein  
His-F-I, which was purified in its native as well as in its refolded  
form and the native purified N terminally extended protein, ex-F-I. In  
mice, significantly higher antibody titers and survival rates after  
challenge with *Pseudomonas aeruginosa* (ATCC 33348) were observed  
following immunization with protein His-F-I, purified under native  
conditions. It was concluded that the \*OprF\*\*\*-\*OprI\*\*\* \*antigen\*\*\*  
would be a good candidate for a *P. aeruginosa*\*\*\* vaccine in humans.  
However, for clinical use, the production and isolation of a highly  
purified OprF-OprI without a fusion component is essential. (29 ref)

9/3,AB/36 (Item 2 from file: 357)  
DIALOG(R)File 357:Derwent Biotechnology Abs  
(c) 2002 Derwent Publ Ltd. All rts. reserv.

0202022 DBA Accession No.: 96-12793

A novel mechanism to introduce surface antigens of pathogenic bacteria -  
lipopolysaccharide and outer membrane protein surface antigen  
simultaneous expression in attenuated *Salmonella* for potential  
recombinant vaccine (conference abstract)

AUTHOR: Kadurugamuwa J; Saxena A

CORPORATE AFFILIATE: Univ.Guelph

CORPORATE SOURCE: Department of Microbiology, CBDN, University of Guelph,  
Guelph, Ontario N1G 2W1, Canada.

09/359426

JOURNAL: Abstr.Gen.Meet.Am.Soc.Microbiol. (96 Meet., 270) 1996

ISSN: 0067-2777 CODEN: 0005P

CONFERENCE PROCEEDINGS: American Society for Microbiology, 96th General Meeting, New Orleans, LA, 19-23 May, 1996.

LANGUAGE: English

ABSTRACT: A simple novel approach to incorporate surface antigens from several Gram-negative pathogens into a vaccine strain thereby constructing a heterologous hybrid strain with multiple protective \*antigens\*\*\* was described. Intact surface \*antigens\*\*\* such as lipopolysaccharide and \*outer\*\*\* \*membrane\*\*\* \*proteins\*\*\* from *Shigella flexneri* and *Pseudomonas aeruginosa*\*\*\* were transferred simultaneously into an attenuated *Salmonella typhi* strain using membrane vesicles to produce a hybrid carrying multiple surface antigens. The fusion and firm integration of foreign antigens into the surface of the vaccine strain was conclusively demonstrated using immunogold electron microscopy and Western immunoblots. Because the attenuated *Salmonella* is unable to replicate in mammalian cells, but able to direct antigens to the immune system, the method of direct integration of protective antigens of multiple pathogens on to a vaccine vehicle is a potential new approach for vaccine development. (0 ref)

9/3,AB/37 (Item 3 from file: 357)

DIALOG(R)File 357:Derwent Biotechnology Abs

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0185707 DBA Accession No.: 95-12528

*Pseudomonas aeruginosa* outer membrane protein OprF as an expression vector for foreign epitopes: the effects of positioning and length on the antigenicity of the epitope - *Plasmodium falciparum* circumsporozoite protein epitope expression; recombinant vaccine or diagnostic agent production

AUTHOR: Wong R S Y; Wirtz R A; +Hancock R E W

CORPORATE AFFILIATE: Univ.British-Columbia Walter-Reed-Army-Inst.Res.

CORPORATE SOURCE: Department of Microbiology and Immunology, The University of British Columbia, 300-6174 University Boulevard, Vancouver, BC V6T 1Z3, Canada. email:bob@cbsd.ubc.ca

JOURNAL: Gene (158, 1, 55-60) 1995

ISSN: 0378-1119 CODEN: GENED6

LANGUAGE: English

ABSTRACT: A simple malarial epitope (the 4-amino-acid (aa) repeating epitope (NANP) of the circumsporozoite protein of *Plasmodium falciparum*) was used to show that a gene encoding *Pseudomonas aeruginosa* outer membrane protein-F (OprF) could be used in an expression vector to present foreign peptide sequences. 8 Permissive sites allowing the expression and surface display of the malarial epitope were identified throughout OprF. Using a monoclonal antibody (MAb), effects of positioning and length of the epitope on antigenicity were tested in the vector system. An epitope inserted at aa26 was more reactive with the epitope-specific MAb (more antigenic) in the context of whole cells, whereas those at aa213 and aa290 were more antigenic in the outer membrane. Epitopes inserted at aa188 and aa196 were moderately antigenic, while those at aa215 and aa310 showed low antigenicity in both assays. For aa26 and aa213, insertion of multiple copies of the epitope enhanced reactivity. This system should be useful in development of recombinant vaccines and diagnostic reagents. (20 ref)

9/3,AB/38 (Item 4 from file: 357)  
 DIALOG(R)File 357:Derwent Biotechnology Abs  
 (c) 2002 Derwent Publ Ltd. All rts. reserv.

0159428 DBA Accession No.: 94-01979 PATENT

Use of OprF protein in expression of heterologous oligopeptide on  
 Gram-negative bacterial cell surface - Plasmodium sp. antigen gene  
 cloning, expression and cell surface display on Escherichia coli or  
 Pseudomonas aeruginosa for use as a malaria multivalent live  
 recombinant vaccine

PATENT ASSIGNEE: Univ.British-Columbia 1993

PATENT NUMBER: WO 9324636 PATENT DATE: 931209 WPI ACCESSION NO.:  
 93-405827 (9350)

PRIORITY APPLIC. NO.: US 891495 APPLIC. DATE: 920529

NATIONAL APPLIC. NO.: WO 93CA227 APPLIC. DATE: 930527

LANGUAGE: English

ABSTRACT: A new live recombinant vaccine consists of a population of  
 Gram-negative bacterium (preferably Escherichia coli or Pseudomonas  
 aeruginosa) cells expressing 1 or more heterologous antigens on their  
 surface. The antigen is preferably a malaria parasite antigen (e.g. the  
 epitope PNANPNANPNA). A new DNA sequence has the formula  
 P-N-R1-X-R2-C1, P-N1-R1 or P-N1-R1-C1, where N encodes an N-terminal  
 portion of an outer membrane protein (OMP) with a signal peptide  
 sequence, R1 and R2 are 1-4 restriction sites for insertion of up to  
 207 nucleotides encoding a target peptide, X encodes the central  
 portion of the OMP and C encodes the OMP C-terminus. N1 and C1 encodes  
 the N- and C-termini of the OMP OprF. The DNA is inserted into a vector  
 (e.g. plasmid pRW3) with a regulatable Gram-negative promoter. A target  
 epitope may be inserted in 1 or more linker regions. A Factor-X  
 cleavage site may be fused to Met and a cecropin-melittin hybrid  
 sequence. A selectable marker may also be included on the vector. The  
 recombinant host may be used as a multivalent vaccine against e.g. P.  
 aeruginosa and Plasmodium spp. infection. (45pp)

9/3,AB/39 (Item 5 from file: 357)  
 DIALOG(R)File 357:Derwent Biotechnology Abs  
 (c) 2002 Derwent Publ Ltd. All rts. reserv.

0117595 DBA Accession No.: 91-05237

Production and characterization of monoclonal antibodies to outer membrane  
 proteins of Pseudomonas aeruginosa grown in iron-depleted media -  
 hybridoma construction and monoclonal antibody production

AUTHOR: Smith A W; Wilton J; Clark S A; Alpar O; Melling J; +Brown M R  
 W

CORPORATE SOURCE: Microbiology Research Group, Pharmaceutical Sciences  
 Institute, Aston University, Aston Triangle, Birmingham B4 7ET, UK.

JOURNAL: J.Gen.Microbiol. (137, Pt.2, 227-36) 1991

CODEN: JGMIAN

LANGUAGE: English

ABSTRACT: High molecular mass, iron-regulated \*outer\*\*\* \*membrane\*\*\*  
 \*proteins\*\*\* (IROMPs) from Pseudomonas \*aeruginosa\*\*\* AK1282 were used  
 as \*antigen\*\*\* for monoclonal antibody (MAb) preparation. 50 ug Antigen  
 was emulsified in Freund's adjuvant and injected s.c. into F1 (CBA x  
 BALB/c ) mice. After 4 wk, 50 ug antigen in Freund's incomplete  
 adjuvant was injected i.p. A final boost of 10 ug antigen was given i.v

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4 wk later. After 3 days, the spleen cells of mice giving a strong antibody response were fused with NS1 myeloma cells, and hybridomas were screened for MAb production using ELISA. 5 MAbs were obtained which reacted with an 85 kDa IROMP separated by SDS-PAGE, but gave only low-level binding to whole *P. aeruginosa* cells by immunogold electron microscopy. Iodination of whole cells indicated that the 85 kDa IROMP was surface-exposed. The MAbs were only cross-reactive with clinical isolates representing 8 of the 17 International Antigenic Typing Scheme serotypes of *P. aeruginosa*, suggesting significant heterogeneity with respect to this IROMP. These results are applicable to the immunological intervention of the iron-uptake system of pathogenic bacteria. (36 ref)

9/3,AB/40 (Item 6 from file: 357)  
DIALOG(R)File 357:Derwent Biotechnology Abs  
(c) 2002 Derwent Publ Ltd. All rts. reserv.

0103492 DBA Accession No.: 90-06183 PATENT  
Pseudomonas aeruginosa outer membrane lipoprotein - recombinant vaccine construction; outer membrane protein-I gene cloning and expression in Escherichia coli; monoclonal antibody preparation and hybridoma construction  
PATENT ASSIGNEE: Behringwerke 1990  
PATENT NUMBER: EP 357024 PATENT DATE: 900307 WPI ACCESSION NO.: 90-068794 (9010)  
PRIORITY APPLIC. NO.: DE 3829616 APPLIC. DATE: 880901  
NATIONAL APPLIC. NO.: EP 89115992 APPLIC. DATE: 890830  
LANGUAGE: German  
ABSTRACT: The following are claimed: Pseudomonas aeruginosa ATCC 33354 outer membrane protein-I (OMP-I) with a defined protein sequence, and its immunogenic fragments; a DNA sequence encoding OMP-I; and polyclonal or monoclonal antibody preparations obtained using OMP-I or its immunogenic fragments as "antigens". Plasmid pITaq containing the "OMP"-I coding sequence is isolated by screening a *P. aeruginosa* phage gene bank using monoclonal antibody 6A4, subcloning SalI fragments in plasmid pUC19, transformation of Escherichia coli with the recombinant plasmids, and isolating plasmid pITaq from a positive transformant. Recombinant *E. coli* containing plasmid pITaq produces recombinant OMP-I. OMP-I and its fragments are useful in recombinant vaccine construction against Pseudomonas infections. The DNA probes and monoclonal antibodies are useful in diagnosis, and the antibodies are also useful for passive immunization. (5pp)

9/3,AB/41 (Item 7 from file: 357)  
DIALOG(R)File 357:Derwent Biotechnology Abs  
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0096612 DBA Accession No.: 89-14603 PATENT  
Human monoclonal antibody, specific for Pseudomonas aeruginosa antigen, and its production - and application in bacterial disease diagnosis and therapy; hybridoma construction  
PATENT ASSIGNEE: Sumitomo-Chem.; Sumitomo-Pharm. 1989  
PATENT NUMBER: JP 1193300 PATENT DATE: 890803 WPI ACCESSION NO.: 89-266867 (8937)  
PRIORITY APPLIC. NO.: JP 8817958 APPLIC. DATE: 880127  
NATIONAL APPLIC. NO.: JP 8817958 APPLIC. DATE: 880127

Searcher : Shears 308-4994



09/359426

LANGUAGE: Japanese

ABSTRACT: A human monoclonal antibody (MAB) specific for *Pseudomonas aeruginosa*\*\*\* \*outer\*\*\* \*membrane\*\*\* \*protein\*\*\* \*antigen\*\*\*, \*OMP\*\*\*-19, is new. The MAB binds to almost all serotypes (at least 70%), especially serotype M, of *P. aeruginosa* and can be administered to humans at 0.5-500 mg, preferably at 5-50 mg. The MAB is of IgG or IgM type and may be used in the diagnosis, prophylaxis or therapy of bacterial infections. Also new is the hybridoma YK-1H5, which produces the MAB and any derivatives of the hybridoma. The hybridoma is produced by fusing human B-lymphocytes, which can produce OMP-19-specific antibodies, with mouse myeloma cells or human mouse deriving heteromyeloma cells. The hybridoma is cultured and the MAB is collected. The MAB is inactivated by protease-K treatment and heating at 73 deg for 10 min in the presence of 1% SDS and 5% 2-mercaptoethanol. The MAB has mol.wt. 19,000 by SDS-PAGE under reducing conditions and mol.wt. 25,000 by electrophoresis under the same conditions. (12pp)

Set	Items	Description
S10	335	AU=(CRIPPS, A? OR CRIPPS A?)
S11	901	AU=(CLANCY, R? OR CLANCY R?)
S12	137	AU=(DUNKLEY, M? OR DUNKLEY M?)
S13	89	AU=(KYD, J? OR KYD J?)
S14	6	S10 AND S11 AND S12 AND S13
S15	236	S10 AND (S11 OR S12 OR S13)
S16	59	S11 AND (S12 OR S13)
S17	12	S12 AND S13
S18	1155	S10 OR S11 OR S12 OR S13
S19	9	(S15 OR S16 OR S18) AND S4
S20	21	(S14 OR S17 OR S19) NOT S8
S21	10	RD (unique items)

- Author(s)

>>>No matching display code(s) found in file(s): 65, 113

21/3,AB/1 (Item 1 from file: 65)  
DIALOG(R)File 65:Inside Conferences  
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01819048 INSIDE CONFERENCE ITEM ID: CN018764662  
Vaccine Strategies Against *Pseudomonas aeruginosa* Infection in the Lung  
\*Cripps, A. W.\*\*\*; \*Dunkley, M. L.\*\*\*; \*Clancy, R. L.\*\*\*; \*Kyd, J.\*\*\*  
CONFERENCE: New approaches to bacterial vaccine development-Symposium  
BEHRING INSTITUTE MITTEILUNGEN, 1997; VOL 98 P: 262-268  
The Institute, 1997  
ISSN: 0301-0457  
LANGUAGE: English DOCUMENT TYPE: Conference Papers  
CONFERENCE EDITOR(S): Von Specht, B. U.  
CONFERENCE SPONSOR: Behring Institute Research Communications  
CONFERENCE LOCATION: Munich, Germany  
CONFERENCE DATE: May 1996 (199605) (199605)

21/3,AB/2 (Item 2 from file: 65)  
DIALOG(R)File 65:Inside Conferences  
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01080798 INSIDE CONFERENCE ITEM ID: CN010582635  
Immunity to *Pseudomonas aeruginosa*\*\*\* Induced by \*OprF\*\*\* Following  
Intestinal Immunization

09/359426

\*Cripps, A. W."\*\*; \*Dunkley, M. L."\*\*; Taylor, D. C.; Cousins, S.  
CONFERENCE: Advances in mucosal immunology-7th International congress of  
mucosal immunology

ADVANCES IN EXPERIMENTAL MEDICINE AND BIOLOGY, 1995; VOL 371//B P:  
761-764

Plenum Press, 1995

ISSN: 0065-2598 ISBN: 0306450127

LANGUAGE: English DOCUMENT TYPE: Conference Selected papers

CONFERENCE EDITOR(S): Mestecky, J.

CONFERENCE LOCATION: Prague

CONFERENCE DATE: Aug 1992 (199208) (199208)

NOTE:

In 2 pts

21/3,AB/3 (Item 1 from file: 144)

DIALOG(R)File 144:Pascal

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14812577 . PASCAL No.: 00-0494868

Catalase immunization from *Pseudomonas aeruginosa* enhances bacterial  
clearance in the rat lung

THOMAS Linda D; \*DUNKLEY Margaret L"\*\*\*; MOORE Ryka; REYNOLDS Simone;  
BASTIN David A; \*KYD Jennelle M"\*\*\*; CRIPPS Allan W

Gadi Research Centre, Division of Science and Design, University of  
Canberra, Canberra, ACT 2601, Australia; Discipline of Pathology, Faculty  
of Medicine and Health Sciences, University of Newcastle, Callaghan, NSW  
2308, Australia

Journal: Vaccine, 2000, 19 (2-3) 348-357

Language: English

*Pseudomonas aeruginosa* is a common cause of infection in  
immunocompromised patients and is the major contributor to morbidity in  
individuals with cystic fibrosis (CF). The antibiotic resistance shown by  
this pathogen and morbidity in patients with chronic infection has  
encouraged investigations into the development of a vaccine. This study  
reports the purification of a 60 kDa protein, isolated from a mucoid strain  
of *P. aeruginosa*, identified by amino acid sequence analysis as the catalase  
protein (KatA). A rat model of acute *P. aeruginosa* respiratory infection  
was used to investigate the immunogenicity of KatA and determine the  
potential of mucosal immunization with KatA to protect against infection.  
Immunization regimens compared a single intra-Peyer's patch (IPP)  
immunization with an IPP primary inoculation followed by an intratracheal  
boost to the lungs. Mucosal immunization with KatA resulted in significant  
pulmonary clearance of both homologous ( $p < 0.001$ ) and heterologous ( $p < 0.05$ )  
strains of *P. aeruginosa*. Both immunization regimens enhanced  
bacterial clearance, increased the rate of recruitment of phagocytes to the  
bronchoalveoli and induced KatA-specific antibody. However, the regimen  
that included a boost induced a more effective immune response that also  
resulted in better clearance of *P. aeruginosa* from the lungs. Mucosal  
immunization induced KatA-specific antibodies in the serum and the  
bronchoalveolar lavage, and KatA-specific lymphocyte proliferation in vitro  
in cells isolated from the mesenteric lymph nodes of immunized rats. The  
data presented suggests that KatA has the potential to afford a protective  
immune response against pulmonary infection by *P. aeruginosa*.

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21/3,AB/4 (Item 2 from file: 144)  
 DIALOG(R)File 144:Pascal  
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14485498 PASCAL No.: 00-0147422

A P5 peptide that is homologous to peptide 10 of \*OprF\*\*\* from *Pseudomonas aeruginosa*\*\*\* enhances clearance of nontypeable *Haemophilus influenzae* from acutely infected rat lung in the absence of detectable peptide-specific antibody

WEBB D C; \*CRIPPS A W\*\*\*

The Gadi Research Center, Faculty of Applied Science and Design, University of Canberra, Canberra City, Australian Capital Territory 2601, Australia; The Membrane Biochemistry Group, Division of Biochemistry and Molecular Biology, John Curtin School of Medical Research, Australian National University, Canberra City, Australian Capital Territory 2601, Australia

Journal: Infection and immunity, 2000, 68 (1) 377-381

Language: English

Nontypeable *Haemophilus influenzae* (NTHi) is an opportunistic pathogen associated with otitis media and the exacerbation of chronic bronchitis. This study reports the vaccine potential of three peptides representing conserved regions of the NTHi P5 outer membrane protein which have been fused to a promiscuous measles virus F protein T-cell epitope (MVF). The peptides correspond to a region in surface loop one (MVF/L1A), the central region of loop four (MVF/L4), and a C-terminal region homologous to peptide 10 of \*OprF\*\*\* from *Pseudomonas aeruginosa*\*\*\* (MVF/H3). Immunization of rats with MVF/H3 was the most efficacious in significantly reducing the number of viable NTHi in both the broncho-alveolar lavage fluid (74%) and lung homogenates (70%), compared to control rats. Importantly, despite significantly increased rates of clearance, immunization with MVF/H3 elicited poor antibody responses, suggesting that cell-mediated rather than humoral responses play an important role in the enhanced clearance of NTHi in this model.

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21/3,AB/5 (Item 3 from file: 144)  
 DIALOG(R)File 144:Pascal  
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12238537 PASCAL No.: 95-0462639

Enhanced respiratory clearance of nontypeable *Haemophilus influenzae* following mucosal immunization with P6 in a rat model

\*KYD J M\*\*\*; \*DUNKLEY M L\*\*\*; CRIPPS A W

Univ. Newcastle, fac. medicine, discipline pathology, Callaghan N.S.W. 2308, Australia

Journal: Infection and immunity, 1995, 63 (8) 2931-2940

Language: English

Nontypeable *Haemophilus influenzae* (NTHi) is a common cause of infection of the respiratory tract in children and adults. The search for an effective vaccine against this pathogen has focused on components of the outer membrane, and peptidoglycan-associated lipoprotein P6 is among the proposed candidates. This study investigated the immunogenicity of P6 in a rat respiratory model. P6 was purified from two strains of NTHi, one capsule-deficient strain and an H. influenzae type b strain, and assessed for clearance of both homologous and heterologous bacterial strains following mucosal immunization. A protective immune response was determined

by enhancement of pulmonary clearance of live bacteria and an increased rate of recruitment of phagocytic cells to the lungs. This was most effective when Peyer's patch immunization was accompanied by an intratracheal (IT) boost. However, the rate of bacterial clearance varied between strains, which suggests some differences in anti-P6 immunological defenses recognizing the expression of the highly conserved P6 lipoprotein on the bacterial surface in some strains. P6-specific antibodies in both serum and bronchoalveolar lavage fluid were cross-reactive and did not differ significantly in strain specificity, demonstrating that difference in clearance was unlikely due to differences in P6-specific antibody levels. Serum homologous and heterologous P6-antibody was bactericidal against NTHi even when enhanced clearance had not been observed. Peyer's patch immunization induced P6-specific CD4 SUP + T-helper cell proliferation in lymphocytes isolated from the mesenteric lymph nodes. An IT boost increased the level of P6-specific antibodies in serum and bronchoalveolar lavage fluid, and P6-specific mesenteric node lymphocyte proliferation. Cells from rats immunized with P6 demonstrated proliferation following stimulation with P6 from nonhomologous strains; however, there was some variation in proliferative responses to P6 from differen

21/3,AB/6 (Item 1 from file: 440)  
 DIALOG(R)File 440:Current Contents Search(R)  
 (c) 2002 Inst for Sci Info. All rts. reserv.

12540407 GENUINE ARTICLE#: 412DH NUMBER OF REFERENCES: 61  
 TITLE: Mucosal immunity in the lung and upper airway  
 AUTHOR(S): \*Kyd JM (REPRINT)\*\*\*; Foxwell AR; \*Cripps AW\*\*\*  
 AUTHOR(S) E-MAIL: kyd@scides.canberra.edu.au  
 CORPORATE SOURCE: Univ Canberra, Div Sci & Design, /Canberra/ACT  
 2601/Australia/ (REPRINT); Univ Canberra, Div Sci & Design,  
 /Canberra/ACT 2601/Australia/  
 PUBLICATION TYPE: JOURNAL  
 PUBLICATION: VACCINE, 2001, V19, N17-19,SI (MAR 21), P2527-2533  
 PUBLISHER: ELSEVIER SCI LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON,  
 OXFORD OX5 1GB, OXON, ENGLAND  
 ISSN: 0264-410X

LANGUAGE: English DOCUMENT TYPE: ARTICLE

ABSTRACT: The mucosal surfaces of the lungs and upper airways are common sites for infection. Extensive studies of the mechanisms associated with immune responses in the respiratory tract have found that understanding the: system is challenging and involves many complex interactions to prevent and eliminate infection. Immune protection against diseases transmitted through the respiratory tract requires an understanding of the important aspects associated with beneficial; detrimental or ineffective immune responses. Two critical aspects of an immune response against a pathogen are that of the inductive stage, either induced by vaccination or primary infection. and the effector stage, the ability to recognise, respond to and eliminate the infection without detriment to the host. An immunisation strategy must not only have a measure of the induced antigen specific response. but this response must also be protective. (C) 2001 Elsevier Science Ltd. All rights reserved.

21/3,AB/7 (Item 2 from file: 440)  
 DIALOG(R)File 440:Current Contents Search(R)  
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09/359426

11051350 GENUINE ARTICLE#: 250PR NUMBER OF REFERENCES: 25  
TITLE: Investigation of mucosal immunisation in pulmonary clearance of  
Moraxella (Branhamella) catarrhalis  
AUTHOR(S): \*Kyd J (REPRINT)\*\*\*; John A; \*Cripps A\*\*\*; Murphy TF  
AUTHOR(S) E-MAIL: kyd@science.canberra.edu.au  
CORPORATE SOURCE: Univ Canberra, Gadi Res Ctr, /Canberra/ACT  
2601/Australia/ (REPRINT); Univ Canberra, Gadi Res Ctr, /Canberra/ACT  
2601/Australia/; SUNY Buffalo, Div Infect Dis, /Buffalo//NY/14215; SUNY  
Buffalo, Dept Microbiol, /Buffalo//NY/14215  
PUBLICATION TYPE: JOURNAL  
PUBLICATION: VACCINE, 1999, V18, N5-6 (OCT 14), P398-406  
PUBLISHER: ELSEVIER SCI LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON,  
OXFORD OX5 1GB, OXON, ENGLAND  
ISSN: 0264-410X  
LANGUAGE: English DOCUMENT TYPE: ARTICLE  
ABSTRACT: Moraxella (Branhamella) catarrhalis is a common cause of otitis  
media in children and respiratory infection in adults with chronic  
obstructive pulmonary disease. To identify immune responses that may  
facilitate the development of a mucosal vaccine, a mouse model to study  
pulmonary responses was established. Regimes involving intra-Peyer's  
patch, intratracheal and intranasal routes of immunisation with killed  
M. catarrhalis were investigated. A mucosal immunisation regime of a  
primary intra-Peyer's patch immunisation with an intratracheal boost  
resulted in significantly enhanced pulmonary clearance of bacteria  
compared to controls following an intratracheal challenge with live  
bacteria. Additional intratracheal boosts did not induce further  
enhancement of clearance. Intra-Peyer's patch immunisation alone,  
intratracheal and intranasal immunisations did not induce enhanced  
clearance. The levels of specific IgG and IgA in serum and  
bronchoalveolar lavage fluid correlated with pulmonary clearance. The  
present study showed that mucosal immunisation induced enhanced  
pulmonary clearance of M. catarrhalis following live bacterial  
challenge. This mucosal immunisation model has demonstrated that a  
mucosal vaccine, particularly an oral vaccine, would be feasible. (C)  
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21/3,AB/8 (Item 3 from file: 440)  
DIALOG(R) File 440:Current Contents Search(R)  
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06872462 GENUINE ARTICLE#: TD021 NUMBER OF REFERENCES: 84  
TITLE: PULMONARY IMMUNITY TO PSEUDOMONAS AERUGINOSA  
AUTHOR(S): \*CRIPPS AW\*\*\*; \*DUNKLEY ML\*\*\*; \*CLANCY RL\*\*\*; \*KYD J\*\*\*  
CORPORATE SOURCE: UNIV CANBERRA, FAC APPL SCI, POB 1/BELCONNEN/ACT  
2616/AUSTRALIA/ (Reprint); UNIV NEWCASTLE, FAC MED & HLTH  
SCI/NEWCASTLE/NSW2308/AUSTRALIA/; AUSTRALIAN INST MUCOSAL  
IMMUNOL/NEWCASTLE/NSW/AUSTRALIA/  
PUBLICATION: IMMUNOLOGY AND CELL BIOLOGY, 1995, V73, N5 (OCT), P418-424  
ISSN: 0818-9641  
LANGUAGE: ENGLISH DOCUMENT TYPE: ARTICLE  
ABSTRACT: Pseudomonas aeruginosa, an opportunistic bacterial pathogen, is a  
major cause of morbidity and mortality in subjects with compromised  
respiratory function despite the significant advances in therapeutic  
practices. The bacteria produces an armoury of products which modify  
its infective niche to ensure bacterial survival. The role of antibody  
in protection against pulmonary infection remains poorly defined.

09/359426

Protection appears to be associated with opsonizing antibody whilst some other antibody responses may be deleterious and promote further lung damage. Cell mediated responses are clearly important in protection against infection. This review proposes a vaccine strategy aimed at enhancing specific T cell responses in the lung which, through T cell-derived cytokines, drive the recruitment of neutrophils to the lung and the subsequent activation of these cells results in the clearance of bacteria from the lung.

21/3,AB/9 (Item 1 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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00979971

ANTIGEN

ANTIGEN

ANTIGENE

PATENT ASSIGNEE:

AUSPHARM INTERNATIONAL LIMITED, (1266032), Level 2, 220 St. George's Terrace, Perth, W.A. 6000, AU\ (Applicant designated states: , AT; BE; CH; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE)  
Chapman, Paul, William, (2312661), Kilburn & Strode, 20 Red Lion Street, London WC1R 4PJ, GB\ (Applicant designated states: , GB)

INVENTOR:

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\*CLANCY, Robert, L., Univ. of Newcastle\*\*\*, Royal Newcastle Hospital, Watt Street, Newcastle, 2300, (AU)

LEGAL REPRESENTATIVE:

Chapman, Paul William et al (73612), Kilburn & Strode, 20 Red Lion Street, London WC1R 4PJ, (GB)

PATENT (CC, No, Kind, Date): EP 980389 A1 000223 (Basic)  
WO 9832769 980730

APPLICATION (CC, No, Date): EP 98901378 980126; WO 98GB217 980126

PRIORITY (CC, No, Date): GB 9701489 970124

DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE

INTERNATIONAL PATENT CLASS: C07K-014/21; A61K-039/104; G01N-033/569

NOTE:

No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; English

21/3,AB/10 (Item 1 from file: 357)  
DIALOG(R)File 357:Derwent Biotechnology Abs  
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0227974 DBA Accession No.: 98-09571 PATENT

New protein antigen from Pseudomonas aeruginosa and its antigenic fragments  
- used in the detection and diagnosis of Pseudomonas aeruginosa,  
particularly in cystic fibrosis individual

AUTHOR: \*Cripps A W\*\*\*; \*Kyd J\*\*\*; \*Dunkley M\*\*\*; \*Clancy R L\*\*\*

CORPORATE SOURCE: Perth, Western Australia, Australia; London, UK.

09/359426

PATENT ASSIGNEE: Auspharm-Int.; Chapman P W 1998

PATENT NUMBER: WO 9832769 PATENT DATE: 980730 WPI ACCESSION NO.:

98-427879 (9836)

PRIORITY APPLIC. NO.: GB 971489 APPLIC. DATE: 970124

NATIONAL APPLIC. NO.: WO 98GB217 APPLIC. DATE: 980126

LANGUAGE: English

ABSTRACT: A protein antigen (1), isolated from *Pseudomonas aeruginosa*, and with a mol.wt. of 60,000 - 65,000, is claimed, that has a given variable N-terminal sequence. Also claimed is an antigenic fragment (2) of this protein, which also has a given variable sequence. The claims also cover an antigen composition (3) containing the protein, or the antigen, along with at least one other *P. aeruginosa* antigen. (1), (2) and (3) are claimed for use in the in vitro diagnosis and detection of *P. aeruginosa*, by bringing any one of them into contact with a mucous test sample, and ascertaining the presence or absence of antibodies to the bacteria. This is particularly useful in individuals suffering from cystic fibrosis. Also claimed is a kit for this procedure consisting of (1), (2) or (3). The claims also cover a vaccine composition that contains (1), (2) or (3), and optionally one or more adjuvants and that elicits an immune response in a subject. The claims extend to the use of (1), (2) or (3) in the preparation of, or use as medicines or vaccines. Finally the claims cover any protein containing the given protein sequence. (22pp)

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